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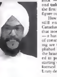

### Can you walk and chew gum?

According to a recent article in *Psychology Today* (Sept/Oct p 14), "dual task interference" is what the psychologists call the phenomena of the inability to walk and chew gum at the same time. While most people can walk and chew gum, some combinations of tasks just can't be performed at the same time no matter how simple. Psychologists talk about a "bottleneck" — it seems our response to a second task is upheld until the response to the first task is selected. When we have to figure out a response, there is a delay.

How is it that we can drive a car and still engage in debates about the Canadian Unity question? The answer is that most of us don't think about driving — it has gone down to an automatic level of consciousness. Selecting and responding are two different things and accomplished by different neural networks in the brain. The bottom line: when expected to perform two tasks, don't bother starting on the second before you've performed your first — and steer clear of Unity debates with student drivers.

### What does this all have to do with computers?

Well, I happened to read that *Psychology Today* article on my way back from the September MacWorld Show in Toronto. At the same show, I got a close-up look at Radius's new RocketShare. What this software/hardware combination does is allow you to use your Macintosh as a multiprocessor. Multiprocessing systems are one of those "big trends" that will probably reach average desktop users in the next few years. OS/2, Unix and Windows NT all promise multiprocessor support, with Compaq, Everex, IBM and a slew of other vendors at various stages of shipping such systems. Unfortunately for most PC users it means buying a new machine that is built to handle multiprocessors, according to William Zachmann of *PC Week* (Aug 10, 1992 p. 60), and it will be 1993-94 before hardware vendors start building them with this capability built in.

Back to Radius. It seems they have licensed the necessary software from Apple, added their Rocket accelerator boards which fit into slots in the Macintosh II line of computers and made Macs into multiprocessor computers. You can add three or four to a Mac Quadra and have a mammoth system.

### Great, now what do you do with such a beast?

Going back to our "walking-and-chewing-gum" dilemma, our computer may be able to do two things at once, but most of us can't. I asked the salesman from Radius what people are using RocketShare for. He said that so far, most of them have been sold to people working with image processing software like Photoshop or rendering software. (Robert Goodman, the award-winning publisher of *Whalesong*, apparently uses one of these systems to publish beautiful four-color coffee table books in record time — *PC Week*, Sept 21, 1992 p. 29.) These types of tasks are things that take the computer a long time to complete. Not a lot of decisions are happening; it is just a computer-intensive task, that they send to one processor and then flip to another one to do some other unrelated task. (Some software is being created to be sophisticated enough to take a chunk of a big task and split it between multiple processors.)

The model of multiprocessor use that seems likely to evolve will resemble similar to the way the human brain works (surprise!). Make a decision, perform a task, make another decision, perform another task, etc.—asymmetric processing.

### How useful will multiprocessors be to most of us?

It is risky to say that multiprocessors will be useless to general business users. On the surface, it would appear that there aren't that many tasks that we really need multiple processors for. I thought of things like modems and downloading. Much of telecommunicating consists of selecting a file to download and then waiting 5-10-20 minutes for the task to be completed. I can already do that with my software. It downloads files in the background and I can continue to work on other things—though occasionally the computer will get a bit jumpy as it gets overworked. Then there are maintenance-type things on my computer like printing, copying files and initializing disks that are just a pain to wait for. Many of these tasks can already be done in the background. OS/2 lets you initialize disks while you work — something that DOS cannot do. System 7 gives the Mac the ability to copy files in the background. Background printing is available on virtually all the major platforms.

### Do we really need multi-processors?

For specific computer-intensive tasks the answer is a definite yes. For general business users, I guess the answer will ultimately depend on how easy it is to use the additional processors and how inexpensive they become. If the power is there for a reasonable price, I am sure we can think of something to do with it. It wouldn't be the first time our tools have caused us to evolve.

Enjoy the issue

Kirtan Singh Khalsa
Publisher/Editor

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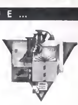

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# Mailbox

**Re. e-mail as a medium**

The article by Peter Talbot on e-mail (August '92) left me wondering if he expects to stay in the dark ages of e-mail forever. Sure, under the constraints of ANSI code and command-line interfaces, communications is rather awkward. However, I run a BBS and have stepped into the present e-mail technology. My old software wouldn't even let me go back to a previous line for corrections, and forget about customizing your message. The system I currently run allows for complete word processor-like operations including color, point sizes, any font you have on your system as well as several effects. My users have been freely expressing themselves through e-mail.

In addition, custom icons as well as sounds and any other type of file may be attached and viewed or heard online or downloaded. I find my users are moving away from poor grammar and, with this freedom, learning to communicate more effectively. I have created conferences to stimulate discussions on topics broader than just technology and computers. We try projects and learn things as we go. This all contributes to what my users call a very friendly, homey atmosphere.

E-mail today is much more than just some typed words with strange abbreviations and symbols formed out of characters to which you may have to turn your head sideways to possibly understand. It is colorful, dynamic, appealing, friendly and fast becoming more than just text. When an e-mail system is connected to an international network (we expect to be on the Internet soon) it can be delivered all over the world and replies can come sooner than one might expect.

The system mentioned below currently handles VT 100 ANSI for all computer types, however, Mac users can download the GUI client software for free and enjoy the graphical environment described above. A Windows version of the GUI client is proposed for the near future.

Bob M. Grahame, System Administrator
EdgeWays! infoLink GUI BBS
604-984-2777

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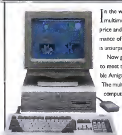

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# WHAT'S NEW

## HP sends DeskJet on the road with portable version

BOISE, IDAHO — Laser printer market leader Hewlett-Packard has finally entered the portable computer market. From the beginning of November, North American PC users will be able to buy a portable version of HP's popular DeskJet 500 inkjet computer that runs on batteries, prints at three pages per minute, uses standard DeskJet ink cartridges and includes four scalable internal fonts along with support for PCL and TrueType

Known as the HP DeskJet Portable, it weighs four pounds and and will sell in the U.S. for $599 (not including battery). It is smaller than the Canon's BJ 10ex Bubble Jet printer and similar offerings from Mannesmann-Tally and Kodak-Diconix, and the company claims that it will offer users everything they can get in the existing DeskJet 500-series systems

A number of optional extras are available including a 50-sheet-capacity cut-sheet feeder, a rechargeable battery, a "world-wide rapid recharger" (which you'll need in order to run the system on anything other than 110 Volts) and a carrying case In the U.S , the company is charging $59 for each of the add-ons except the rechargeable battery, which will sell for $49

The interesting thing about the battery is that it's actually a standard Panasonic camcorder battery so that if you can't get one from HP, any large video store or electronics shop should stock it.

The DeskJet Portable includes scalable versions of Times Univers (similar to Helvetica), Courier and Letter Gothic typefaces — from 6 to 14 point — and will also handle TrueType and Adobe Type Manager fonts in Windows. The printer is also capable of printing in either portrait or landscape mode

Contact: HP Canada (416) 678-9430

## VTech offers high-speed notebook with on-board modem

Markham-based VTech Computer Systems has announced a new 386XS-based 33 MHz PC-compatible notebook computer with built-in fax/data modem and 2 MB of RAM. The company is offering a 60 MB hard disk with the machine and provides a video system that allows users to display information on both the internal flat screen and an external color screen. The machine sells for $2995

Contact: (416) 477 2610

## IBM slashes PS/2 prices

IBM has drastically cut the cost of its PS/2 systems in reaction to recent moves by Compaq, Dell and other competitors. The price reductions are by as much as 44 per cent. Typical of these are the PS/2 56 SX-45, IBM's 20 MHz 386SX system with 4 MB of RAM, a 2 88MB floppy disk drive and a 40MB hard disk It comes down from $2,200 to $1265

Contact: IBM Canada (1-800-569-2139)

## CA battles 'office' products

Computer Associates has entered the market for Microsoft Windows "office" products. The company has announced a "bundle" of five of its Windows-based applications to be sold together as CA-Simply Business.

The package includes ACCPAC Simply Accounting, the CA-Textor word processor the CA-Compete! spreadsheet, the CA-UpToDate group scheduling system and the CA-Cricket Present presentation graphics application. Computer Associates is selling the whole package for $649 — some $851 less than it would have cost you to buy them all individually

Contact: (416) 676-6700

## 1992 Canadian Computer Show & Conference —the Biggest Show in Town

Business people confused about the plethora of computer shows lately are advised to pay attention to the Canadian Computer Show & Conference happening Monday, November 23 through Thursday, November 26 (the show is in fact four full days, not three as was stated last month in The Computer Paper) It is really the show of shows for the Toronto market. The Toronto International Centre (6900 Airport Road, Toronto) will be filled with over 300 exhibitors and 30,000 plus attendees. This year, along with checking out the latest offerings from major vendors such as Microsoft NEC Compaq, Canon, IBM, Lotus, WordPerfect, Fujitsu, QMS Toshiba and Lotus, attendees can experience Virtual Reality, plug into a wireless LAN, sample the Software Pavilion, drop by the home office display, handle the latest palm top and pen-based computers quiz the experts at the Consultants Forum and test drive OS/2 at IBM's OS/2 Test Drive Centre

The Show also features the three-day "The Strategic Edge" Conference. Monday, November 23 will focus on Management Issues, Tuesday November 24th on Technical Challenges and the Computing at Home Seminars, Wednesday November 25th on Advanced Computing and a special series for VARs Only

Top-of-the-line speakers include Jim Manzi, CEO of Lotus, who will give the keynote address on the evolving role of computers in workgroup and portable computing, Gordon Eubanks, CEO of Symantec, Terese Myers, CEO of Quarterdeck, and Frank Clegg, General Manager of Microsoft Canada.

Show times are Monday, November 23, 10 am-6 pm, Tuesday, November 24, 10 am-8 pm; Wednesday November 25, 10 am-6 pm, Thursday November 26 10 am-5 pm.

Registration at the door is $20 A separate registration fee is required for the Conference

Contact: For further details and registration information, call Canadian Computer Show & Conference, 20 Butterick Road Toronto Ontario M8W 3Z8 Tel. 416-253-7117 Fax: 416-252-9848

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## Microsoft adds network software and e-mail to new version of Windows

Microsoft has fired off a major salvo in its war to seize the PC network market from Novell.

At a recent briefing for industry editors and analysts in Bellevue, WA, Microsoft described its plan "for making it easier for people in both large and small companies to build workgroup and enterprise solutions."

As part of the presentation, Microsoft demonstrated several new products, including the Microsoft Windows for Workgroups operating system — which includes integrated networking — as well as database products for Windows 3.1.

During the all-day session, Microsoft outlined its strategy for workgroup computing, which will be based on an open, evolutionary, scalable solutions-based approach. Microsoft says it is adding basic workgroup functionality to the operating system, extending and adding to its line of applications, and supporting custom solutions to satisfy the needs of workgroups.

According to Bill Gates, chairman and CEO of Microsoft, it is all about meeting the needs of the networked 1990s. "We are seeing the world evolve from islands of information on individual workstations to groups of people collaborating on shared information," he said. "Microsoft is providing the infrastructure in the operating system for the development of the next generation of applications — those that empower these groups of people and bring our vision of 'Information at Your Fingertips' to the desktop."

Windows for Workgroups, the first version of Microsoft Windows to incorporate workgroup functionality into the operating environment, was demonstrated during the briefing. Windows for Workgroups is a version of Microsoft Windows 3.1 that is supposed to make it easy for groups to share information and work together by providing built-in file and printer sharing. It comes complete with electronic mail, group scheduling and network-enabled dynamic data exchange (DDE) that allows users to link objects across the network.

Windows NT, meanwhile, will also incorporate these workgroup capabilities when it is shipped in early 1993, while Windows for Workgroups is scheduled to be available at the end of October 1992.

Microsoft also outlined a strategy for integrating Windows for Workgroups and the planned Windows NT operating system into existing network and messaging systems, and demonstrated future systems management tools for the large enterprise. In addition, for companies with host-based or integrated office systems as their computing infrastructure, Microsoft demonstrated why it thinks WOSA can enable a smooth migration to LAN-based client-server solutions.

Another key component of Microsoft's workgroup strategy is to make existing applications such as Microsoft Excel and Microsoft Word "workgroup-enabled" through standard APIs such as MAPI (Microsoft's electronic mail interface). The company says this would create new applications and technologies critical to both individuals and groups as well as "leverage" applications as building blocks for customized solutions.

In addition, Microsoft says it recognizes the importance of treating data as a reusable asset with general purpose databases. "We view workgroup computing as an evolutionary process," said Steve Ballmer, executive vice president, worldwide sales and support at Microsoft. "Users should be able to use the applications and operating systems they are already familiar with, and be able to pick and choose the elements they need for their particular workgroup without the inflexibility of one-size-fits-all products."

Microsoft also said that development of workgroup solutions requires an infrastructure to provide the service, support and specialized expertise needed for complex business computing.

To that end, Microsoft announced yesterday the launch of a new initiative to support businesses integrating Microsoft software into all kinds of PC "solutions." As the first element in this strategy, Microsoft will offer direct access to Microsoft tools, support and information for companies in the business of selling value-added software services to customers. This support plan is called the Microsoft Solutions Channels.

Microsoft says it will offer a broad outreach to corporations and specialists who provide personal computing solutions, of which the Microsoft Solutions Channels is a part. It comprises a long-term strategic shift toward building business relationships with companies whose use of personal computing technologies is being reshaped by current industry trends.

The new Microsoft Solutions Channels supports diverse companies of four types — value-added resellers, systems integrators, consultants and training organizations — whom Microsoft says require a wide range of information about Microsoft products in a variety of personal computing environments.

Microsoft will offer these organizations sales and product information, development services, customer support tools including priority telephone support, education and business development support, and early access to Microsoft products.

Microsoft says the program is a result of extensive research conducted over the last year and incorporates the company's experience to date in serving the emerging needs of the thousands of companies providing software solutions that integrate Microsoft software. It expands Microsoft's channel offerings into an overall program, incorporating two pre-existing Microsoft programs — the Network Specialist and Industry Specialist programs.

Microsoft promised that members of those programs will retain all their current benefits and receive all benefits from the new program, at their option.

"Personal computing technologies have evolved to a point where they are central to business computing," said Jeff Raikes, senior vice president at Microsoft. "One result has been extraordinary new opportunities opening up for software service companies able to provide the tailored personal computing solutions businesses now want. Our goal is to work with those companies, to make it easier for them to provide tailored solutions that incorporate industry standards including Microsoft products, platforms and tools."

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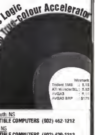

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## Apple recalls early PowerBook 100 notebook Macs

Apple Computer is urging owners of early production PowerBook 100 notebook computers to return their units for what it calls "minor circuit board modification."

Apple says it has "become aware" of a malfunction in some PowerBook 100 systems that results in an electrical short and subsequent melting of a small hole in the bottom of the system's outer case.

Apple says this only affects PowerBook 100 systems bearing serial numbers below SQ211xxxxxx and SS215xxxxxx. It says that Apple PowerBook 100 systems with serial numbers equal to or greater than SQ211xxxxxx and SS216xxxxxx are not affected, nor are any other PowerBook models.

Apple further says that the problem has only occurred on three of almost 60 000 PowerBook 100 systems and that no personal injury or property damage (to anything other than the PowerBook itself) resulted from the malfunction.

If you think you may need to return your PowerBook 100, contact your nearest Apple Canada dealer.

Contact: Apple Canada Technical Support Line (800) 263-3394

## Great Plains Software announces accounting software for Mac and Windows

Accounting software specialist Great Plains Software will move into the graphical software market later this year with the launch of packages for the Apple Macintosh and Microsoft Windows.

Known as Great Plains Dynamics, the system will provide full use of accounting functions in a graphical environment as well as support Novell's Btrieve NLM or FairCom's c-tree file server file managers. To enable development of its applications for both the Mac and Windows, Great Plains has also created Dexterity — a "cross-platform" development system optimized for developing large transaction-oriented applications using object-oriented programming techniques.

Contact: Great Plains Software (800) 456-0025

## Mississauga gets new technical bookstore

The Canadian Professional Information Centre recently opened its doors in Mississauga. The centre stocks hundreds of titles on engineering, health care and computer science and says its most popular titles include *Machinery's Handbook*, *Unix Utilities*, *Handbook of Environmental Compliance* and *Occupational Therapy*.

Contact: Canadian Professional Information Centre (416) 624-1058

## Fracterm brings high-quality graphics to BBSs

Fracterm Inc., a Vancouver-based software developer, has recently announced the release of Fracterm 1.1, a BBS package capable of real-time graphics.

According to Fracterm CEO Dwight Jones, "everyone thought that we'd have to wait for both ISDN and fiber optics to see real-time graphics, but hopefully seeing is believing. It's here now."

According to Scott Brinker, vice president of a leading BBS software developer Galacticomm Inc., "Fracterm. This technology is going to blow the doors off the BBS market. High-quality on line graphics, with incredibly fast response time — such as the Fracterm package — are going to revolutionize the way people use bulletin boards."

The package consists of four modules which can upgrade a variety of host BBS software packages to what the vendor calls "full graphical status." The four modules are 1) software compression based on fractal compression (in excess of 200:1 according to the developer—which allows 256K VGA 640 x 400 24 bit files to be a mere 10K or lower), 2) a Sysop Module, 3) a terminal program for BBS users, and 4) a viewer for off-line viewing.

Pricing has been set at $175 per phone line. A format to support on-line magazines or newspapers is scheduled to be released before the year end.

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*Prices may vary by Dealer. Above price is approximate average selling price for stated configuration.

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ADVERTISING FEATURE

# Amiga Talk

## Sponsored by Amsoft Computer Systems

Today's microcomputer market offers three distinct computer systems: IBM or MS-DOS compatibles, the Apple Macintosh and the Commodore Amiga. This first edition of *Amiga Talk* is going to be a simple introduction to the Amiga and some of the features which make it so unique.

The Amiga was introduced in 1985 as a multitasking computer featuring a custom chipset which, amongst other things, gave it unique graphics and sound capabilities. Add autoconfiguring memory and a choice of both a graphical user interface as well as a command line interface for Amiga-DOS commands and you had a technological precedent which still forms the heart and soul of the Amiga.

Three million Amigas later, the combination of all of these original unique features have yet to be duplicated on the other two platforms. Macintosh's System 7, Microsoft's Windows NT and IBM's O/S 2 are finally approaching stable multitasking.

Amiga's custom chipset represents an integrated approach to computer design. It also reduces the load on the CPU. Its graphical user interface (Amiga calls it "Intuition") is slicker than the competition.

The Amiga is a lot of computer, "straight out of the box."

When you set up your first Amiga, you don't worry about graphics cards, sound cards, configuring memory between conventional and high memory or making sure that your hard drive will have enough room to hold some programs and files after you have loaded Windows. All you have to do is to hook the machine up and start using it. "It's intuitive."

**Don't be fooled by a wolf in sheep's clothing. The Amiga is one powerful computer.**

A word of warning though. Don't be fooled by a wolf in sheep's clothing. The Amiga is one powerful computer. Ask Lucasfilm's special effects group, Industrial Light and Magic. Or Walt Disney Studios. Or an Amiga user who has just raytraced a rendering at 20 MIPS or more.

Or ask my grade-school aged children who love the speed and presence that only an Amiga can bring to a game or simulation. They also use it to produce desktop publishing quality school assignments, or to compose music, record and modify sound samples, create pictures and text and combine it all into a multimedia extravaganza of an interactive adventure story.

Amiga users tend to have a lot of fun. There is so much that they can do with their computers. They tend to uncover creative talents which they often did not even know that they possessed. To help them along, thanks in large part to Commodore's open support of developers, there is a an abundance of quality software.

The Amiga has never been described foremost as a [illegible] all business applications, thank you very much. However, its business strength is in the added edge it provides with in-house desktop publishing, video production and multimedia presentations. The advertising edge, improved corporate image and sales tools provided from any or all of these applications are worthy of serious consideration.

Without a doubt the Amiga is the industry leader in multimedia, graphics and desktop video. Commodore Business Machines is committed to keeping it that way. Their newest top-of-the-line model, the A4000 is the beginning of a new series of Amigas which are intended to knock the socks off the competition.

The A4000 introduces a new graphics standard, AGA, which is an acronym for Advanced Graphics Architecture. AGA displays 256,000 colours on screen at the same time, out of a palette of 16.5 million colours.

However, despite Commodore's demonstrated continuing development of the Amiga, and their continuing excellent fiscal performance at a time when even the Big Blue is bleeding red, I have to question their business acumen in one regard. The problem is, you see, that they continue to make the Amiga upwardly compatible. Isn't planned obsolescence the key to more sales?

The Amiga's operating system is updated by replacement of a ROM chip and a few disks. Updates to the custom chipset are similar plug-in upgrades. Faster CPU's are accommodated by a special CPU expansion slot. Memory expansion? Why you just plug in more RAM chips, boot the computer and presto. That word I used earlier, "autoconfigure," takes over. All installed memory is automatically available for any program, or number of programs (multitasking, remember?)

No introduction to the Amiga world be complete without mention of the "Bridgeboard." Amiga motherboards are fitted with both Amiga and PC expansion slots. By installation of a Bridgeboard between these two slots, you can have a MS-DOS machine inside an Amiga.

This card, the latest model being a 386 running at 20Mhz, allows the Amiga to share devices such as a floppy drive, parallel and serial ports, hard drive, mouse and video display with the PC. How's that for an example of an IBM compatible? In addition to this, the latest versions of the Amiga operating system contain a software utility to convert between Amiga and MS-DOS file formats.

If you are considering a computer purchase, or are merely curious, do yourself a favour, find your closest full fledged Commodore dealer and ask for a complete demonstration of the Amiga. Better yet, do us both a [illegible]

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REVIEW

# Toronto **MacWorld** Show

BY KIRTAN SINGH KHALSA

One of the highlights for me at the Toronto MacWorld Show held Sept 15-17 at the Metro Convention Centre had to be seeing a Macintosh control Lego robots. Whether this is testament to the fact that there was little new and thrilling at the show or a general devolution of my own tastes I'm not sure. There were lots of good evolutionary new items at the Show but seeing a computer reach out and control something outside its own internal world of chips and software struck me as a real feat — even if it was only little plastic blocks. The concept of being able to affect many more things on the other side of the screen is what makes the promise of robotics so appealing to so many. I am sure that the changes we have seen with computers will seem minute once we get to the stage of personal robots.

The gang from **Saved by Technology** (416-9 -1494) were making lots of loud noises with their MIDI and the Mac demonstration. The incidence of ponytails went up considerably in the vicinity of their booth.

**Mindlight Technology** (1-800-263-5888) was on hand to show off their new Hardpac Pocket Drives for the Mac. These drives, which come in a variety of sizes up to and including 120 MB, fit in a shirt pocket and weigh about a pound. They also come in "PowerBook"

**BMUG, the Berkeley Macintosh User Group** (510-84 -0141) was there selling memberships, t-shirts, CD-ROMs, shareware disks and books. The books that have come out of largely volunteer effort are some of the best in the field. They have the *BMUG Shareware Disk Catalog*, over 700 pages long, which catalogues much of the available Macintosh shareware. They also sell *Zen and the Art of Resource Editing*. *The BMUG Guide to Bulletin Boards and Beyond* offers a Macintosh user's view of the world of telecommunications. It got an excellent review in *Boardwatch* magazine.

**Apple** took a number of us into their confidence and showed us their newest computers which were to ship Oct 19th. We can't talk about them till then; suffice to say that everything you read about them in *MacWeek* is true.

**Berkeley Systems, Inc.** (510-540-5535), the folks who brought you After Dark, the screen saver that features flying toasters, are not resting on their laurels. Not only were they selling flying toaster ties, they will be out soon with Star Trek screen savers. Judging by the number of Trekkies who lined up in front of their booth to watch Mr. Spock beam onto their computer screens, they have another winner on their hands.

**Microtek** (213-321-2121) was on hand to show their new ScanMaker II Color Flatbed Scanner. This retooled version of their popular 300Z and 600Z line of scanners offers more speed, easier-to-use software and support for TWAIN (a new standard which allows TWAIN-compatible software to scan directly into a variety of software.) At least one vendor at the show was selling the Scanmaker II for $1099 including the Photoshop bundle.

**Claris** (1-800-668-8948) was showing the new Macintosh version of Filemaker Pro. Most of the enhancements were of the evolutionary type, except for extensive Apple Events support, the promise of a five-fold speed improvement over networks and file compatibility with the new Windows version. I think that Filemaker Pro and Quark Xpress are the crown jewels of the Mac, and now within a matter of months both will be available on Windows. What is left?

Claris did very well with their Filemaker Pro Consultants Centre as well. It seems more than a few businesses have managed to make the easy-to-use database the core of their operations.

**Microsoft** was showing the new version 5.0 of Works. This venerable old-timer, which Microsoft claims has more than 750,000 users, has started to face some serious competition from ClarisWorks,

FileMaker Pro

Claris **FileMaker Pro** promises a five-fold speed improvement over networks and file compatibility with the new Windows version.

Symantec's Great Works and Beagle Brothers' BeagleWorks. I couldn't find an unbusy Microsoftian for long enough to get a demo, so I can't say how good it was.

**The One-Off CD Shop Inc** (1-800-387-1633) seemed to be there as much to sell franchises as to demonstrate their ability to produce low cost "one-off" CDs. The concept is that you go to their store with your shopping cart full of floppies, or carton of Syquest removable hard drives, and they build you a one-of-a-kind CD ROM for around $300, depending on the labor involved in organizing your data. This is a very useful idea for anyone with acres of data who wants an easily accessible method

*Continued on page 14*

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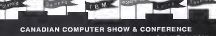

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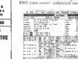
*Continued from page 13*

of keeping it all on file. They are busy setting up these One-Off service bureaus all over the country.

**The Toronto Dominion Bank** (1-800-ON-TD PAY) was showing Apple Paylink, an electronic form that allows Macintosh-based offices to electronically enter their payroll data and then log on to the TD's system to transfer it. The system features on-line database query and changes, flexible report generator with user-defined calculations and summaries, the ability to customize screens, user-defined security down to the field level, the ability to create multiple time cards and that great Mac front end.

**Everywere Development Corp** (416-819-1173) were showing their Butler DAL Server, a feature-rich, multi-user database server and relational database management system. They also sell Connected Accounting, an Omnis-based accounting system that runs seamlessly on both Macs and Windows-based PCs. Finally they were showing NetScrap, a client-server network-aware version of the Scrapbook. Great for offices that have to share clip art. It sells for $395 (one server, unlimited users).



Telemagic, available from Arkon Electronics, is one of the best selling sales management software packages

**Arkon Electronics** (416-593-6502) was demo-ing in their booth (among other things) Telemagic, one of the best-selling sales management software packages. Telemagic has made its name in the DOS world. It is built on the database Foxbase and is available in single and multi user configurations. It features "scripting," order history, a "tickler file" as well as interfaces to a variety of accounting software. It is the way to go if you are setting up a telemarketing division in your company.

**Softcode** seems to be emerging as the independent Macintosh-only full range distributor for Canada. Their booth was booming with a variety of products. One that caught my eye was Agent DA from Team Building Technologies in Montreal (514-278-3010). This is a fairly simple network calendaring program. Simple, but well thought out. It includes a to-do list and an elegant copy-and-paste routine that allows you to share your calendar with other users on the network.

**WorldLink** A couple of months back we ran an article about the Internet. A number of people called looking for ways to get onto the Internet. Now there is WorldLink, a $20-a-month, widely available service that allows users to connect to the Internet. Contact InterCon of Herndon, Virginia (703-709-9890).

**Recycle Your Computer** (416-516-4800) was handing their Blue Book of used Macintosh values about. Their concept is to make dealers aware of a resale value for used computers. As new machines come into the market, a growing aftermarket is developing for less-than-state-of-the-art computers.

**Canada Remote Systems** (voice 416-620-1439), Canada's largest BBS (and North America's best, according to a recent *Boardwatch* magazine poll) was there to show their support for Mac users.

**Xante Corporation** and their Canadian Distributor (Mike Watson 604-925-1141) were showing the Accel-a-Writer upgrade controllers for existing HP and Apple laserwriters. For owners of older generation 300 dpi printers, these controller boards are a must see. They add considerably to the speed and the resolution of both text and graphics. They also sell the complete hi-res printers, the 8000 and 4000 models. Check them out.

For anyone involved in high-end desktop publishing, **EC&I** (Electronic Composition and Imaging) magazine (Youngblood Communications 416-299-6007) is a must-subscribe. They feature a minimum of fluff content and great how-to articles. They also have excellent taste in covers. (Last month they managed to run the same picture on the cover as *The Computer Paper*.)

The trouble with reviewing trade shows, is that there are always about 500 different things you could write about, and it is really a combination of the reviewers' current obsessions and chance that result in what gets covered. This was definitely the case at MacWorld Toronto. A good show, evolutionary (most big vendors save up their big products for San Francisco or Boston) but enough to please the 15,000 or so dedicated Mac fans who came from Toronto, all over the northern U.S. and eastern Canada. ■

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**MacWorld Canada**

## CoSA Shows Video Editing Software

TORONTO, ONTARIO (NB) — Visitors to MacWorld Exposition Canada got a sneak preview of After Effects, software designed to let Macintosh users do video editing and special effects on their computers. The Company of Science & Art (CoSA) plans to release the package late this year, company spokesman David Tecson said.

Tecson described the software, which uses the QuickTime video extensions to Apple's System 7.0, as a post-production tool. It can take video clips and graphics from various sources and edit and combine them. Features include chroma keying, which allows all areas of a specified color to be replaced by a second video signal, and the ability to animate graphic objects.

In a demonstration, for instance, Tecson started with a video signal of a man talking against a plain blue background. He added the graphic image of a red-and-white beach ball and animated it so that it moved around the screen while the man talked. Then he used the chroma-keying feature to replace the plain background with a second video clip showing penguins walking around on an ice floe.

The software supports full 32-bit color and can handle large screens, according to CoSA. Up to 256 layers of video can be edited together.

Tecson said that After Effects will be useful to video production houses. At present, he admitted, Macintosh hardware is probably not fast enough to be satisfactory for final production, but a Mac equipped with After Effects will offer a way for producers to experiment with possible effects before deciding what to produce using full-fledged video editing systems.

In future, Tecson added, improved hardware may make the computer a reasonable platform for final production. He said the software today can provide video quality comparable to 16-millimeter film.

Contact: David Tecson, CoSA, 401-831-2672, fax 401-831-2675

**MacWorld Canada**

## SoftCode Adds To Drive Line

MARKHAM, ONTARIO (NB) — SoftCode Distributors and Consultants announced at MacWorld Exposition Canada that it has added to its line of disk and tape drives for Macintosh computers.

SoftCode manufactures some of the drives entirely in Canada and assembles others out of components imported from the United States and the Far East, a spokesman said. They are sold across Canada and internationally, but not in the United States.

SoftCode added a network server that can accommodate as much as 12 gigabytes of storage. It features high-grade power supplies, multiple cooling systems and a multiple SCSI (small computer systems interface) ID selector, the company said.

SoftCode's servers use the SCSI interface and can be used with any computer that can support SCSI, the spokesman said. The company also added to its line of fixed hard drives.

Contact: The Cohen Group for SoftCode 416-226-5287

**MacWorld Canada**

## "Blue Book" For Used Macs

TORONTO, ONTARIO (NB) — Wondering what your old Macintosh is worth? The answer — or at least the answer according to one Toronto used computer broker — is in the RYC Blue Book.

Recycle Your Computer, a Toronto used-computer dealer that specializes in the Macintosh line, has launched the blue book as a source of current price information on Macintosh models. At present the book only covers the Mac line, but a spokesman at RYC's booth at MacWorld Exposition Canada said the company is considering expanding the reference to include machines based on Intel and compatible chips.

The blue book is available only to authorized dealers and used-computer brokers, the spokesman said. RYC said it promises to pay the prices listed in the blue book to any authorized retailer, dealer, value added resellers, or leasing company.

Recycle Your Computer is publishing updates to the book — a slim, pocket-sized pamphlet — twice a month.

Sample prices include C$700 for a used Macintosh Classic II with four megabytes (MB) of memory and a 40MB hard drive and C$2,300 for a Mac II fx with two MB of memory and an 80MB drive.

Contact: Recycle Your Computer 416-516-4600, fax 416-516-0275

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| Microsoft Bookshelf | $ 114 |
| Mixed Up Mother Goose | $ 56 |
| Monarch Notes | $ 94 |
| Multimedia World Fact Book | $ 54 |
| Sherlock Holmes Con. Detective | $ 85 |
| Secret Weapons | $ 89 |
| Stellar 7 | $ 71 |
| Time Compact Almanac 1990 | $ 75 |
| Time Table of Science | $ 75 |
| Total Baseball | $ 71 |
| U.S. History | $ 94 |
| U.S. Atlas | $ 46 |
| Vital Signs | $ 90 |
| Windows Shareware | $ 62 |
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| World View | $ 55 |
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| 486DX-50, 128K w/ 4 Meg | $ 1138 |

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| Raven 2429(2124) color 24 p | $ 389 |
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| Okidata 840 8ppm w/TONER | $ 1820 |
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| Canon BJ-330 | $ 680 |
| HP DeskJet 500 | $ 478 |
| HP DeskJet 500C color | $ 165 |

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| HP 4M memory board | $ 230 |
| HP Pacific Page Postscript | $ 365 |
| HP Toner for IIP/IIP+/IIIP | $ 89 |
| HP Toner for II/III/IID/IIID | $ 99 |
| HP Legal size paper tray | $ 95 |
| HP DeskJet 500 Ink Cart | $ 30 |
| HP DeskJet 500C Color Cart | $ 49 |
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| Oki Toner for Laser | $ 38 |
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| Hyundai VGA .41 | $ 255 |
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## Getting Started in

# Desktop Publishing

**Over the past few years, prices on computers have been dropping consistently and rapidly. The price wars started by the no-name clone brands have spread, not only to Compaq, IBM and other big players in the PC arena, but also to the Macintosh camp. It's war out there, and, as usual, the consumer is the victor.**

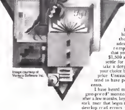

Image courtesy of Ventura Software Inc.

BY GRAEME BENNETT

You've probably noticed price differences between the fastest models and their slower kin diminishing. You have to be careful, though. When the salesperson at your local computer store claims that you can get a 486 for $1,500 and asks you "Why settle for less?", you need to take a deep breath and make your choice based on quality, not price. Unusually low priced PCs tend to have poor quality components.

I have heard many stories of "bargain-priced" monitors that malfunction after a few months, keyboards that begin to stick, mice that begin to squeak, disks that develop read errors, video displays that manifest strange interference patterns, and other grievous tales. You get what you pay for. Seriously.

Keep in mind what you want the computer to do and choose the system that best meets those needs. This probably means that you should decide on the software first.

While it is beyond the scope of this article to give a complete feature list of all the leading desktop publishing (DTP) programs, there are several worth checking out. Here are some of my favorites.

### Aldus PageMaker

Aldus PageMaker is a good choice if ease-of-use is more important than precise typographic control. Its main benefit is that it closely emulates the notion of positioning items on a "pasteboard" that designers doing manual pasteups are already comfortable with. Another advantage is that files created with the PC version of the program can easily be loaded into the Mac version, and vice versa.

PageMaker's main drawback is that its feature set lags behind most of its competition. For instance, PageMaker can have only one document open at a time and its capabilities for rotating text and graphics are weak.

The PC version lacks the ability to perform its own process color separations — a capability included with the Mac version by means of a bundled application called PrePrint. All of these shortcomings, incidentally, are slated to be addressed in a revision to the program due in the first quarter of 1993. For now, though, PageMaker's main strength is its intuitive interface.

With a street price of around C$650, PageMaker is not cheap, but it is one of the most popular DTP applications. If you plan to work for a company doing desktop publishing, PageMaker is a valuable addition to your resumé.

### Quark XPress

Quark XPress, a longtime favorite of Macintosh "power publishers," will soon be available for the PC. Both versions have a street price around $800. A considerable number of XPress users were first attracted to the program because it offered typographical controls and features not available in programs like Ventura Publisher and PageMaker.

A few years ago, this also meant having to suffer through Quark's often-obtuse user interface. Today, however, with version 3.1, XPress employs a "pasteboard" metaphor much like that of PageMaker, and offers a feature set that is significantly more robust. Such subtleties as ligatures, color blends and drop caps are well addressed by the program, and its extensible "XTensions" architecture makes it easy for third-party developers to add specialized features. At this time, I rate Quark XPress as the best overall DTP program on the market.

XPress is slightly faster than PageMaker when redrawing the screen. Program stability is quite good (especially compared to earlier versions, which rightfully came to be known as "Quirk Express").

Mac versions earlier than 3.11 suffered some bugs that occasionally caused the program to quit unexpectedly. When the user re-runs the program in such a case, Quark typically announces that it is already running on the machine when, in fact, it isn't. Rebooting cures this problem, caused by the program's copy-protection scheme, but it is aggravating, nonetheless.

### Ventura Publisher

Ventura Publisher, originally written for the now-obsolete GEM graphical environment, has for a couple of years also been available for Windows and the Mac. The Mac version never really got off the ground, but the Windows version has garnered praise from some users for its prowess at handling long documents.

With version 4.1, (around $600) Ventura Publisher has finally got something over its competition: its paragraph tagging system can now define global formats for text flow and positioning as well as paragraph styles. With this feature, a hundred boxes can have their line thicknesses changed from, say, one point to two in a single step instead of a hundred. None of Ventura's competitors have such a capability.

The new version also contains estimable color-separation capabilities and word processing features. Ventura users who have suffered with the inadequacies of previous versions should check out this upgrade, but be warned. Ventura Publisher 4.1 still has clumsy font handling (it identifies typefaces by numeric codes and uses an awkward "environment width table" to manage font metrics.)

Ventura also continues to lack the ability to have more than one document open at once, and remains blissfully ignorant of Windows interface standards like keyboard navigation of dialog boxes and cursor control while editing text.

### FrameMaker

FrameMaker (about $800) is a technical document processing program that is now available on numerous platforms — Sun, HP, Apollo, DEC, IBM RISC/System 6000, X terminals, Intel iABI, NeXT, Macintosh and PCs running Windows.

The advantage Frame has over other document-processing programs is that it is compatible between all of its platforms. For instance, you could load an X-Windows FrameMaker file into the Macintosh version of FrameMaker, and also into FrameMaker for Windows. There are no more conversion blues for users to face with this kind of application, and you don't have to start over with a switch from one flavor of the program to another, as all the FrameMaker versions have the same interface.

FrameMaker is essentially a cross between a powerful word processor and a desktop publishing program. With powerful features such as the ability to create documents with conditional contents (you could, for example, create a single document that could be printed with metric measurements in Canada and inches-and-feet measurements in the U.S.), FrameMaker is arguably the most powerful document processor available on a PC.

I apologize to budget-conscious readers who will note that virtually all of the programs mentioned here cost over $500. It is true that there are other, less-expensive programs worth consideration for DTP tasks. Unfortunately, I have purchased or used nearly all of them and have concluded that they generally don't represent a very good investment.

Once you get even a little bit serious about DTP, you'll want to take a course on your chosen application, or read a book on the subject. If you choose a cheapo publishing package, you severely limit your future options.

➤

That said, here are a few budget-priced titles I recommend for non professional users.

Microsoft Publisher (about $175) is my top pick as a reasonably priced entry-level title for the PC For the Mac the choice is a little tougher with Personal Press (street priced around $120) and Publish It Easy ($200) being my two favorites

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### CorelDRAW

CorelDRAW is a viable alternative for single page graphics-intensive publishing tasks The latest version (3 0) of the program includes spelling checker thesaurus, hyphenation and column features control over kerning and character paths and numerous other DTP-oriented features. It is worth noting, though that CorelDRAW s vast array of features makes it uncommonly easy to create a document that simply won t print to a PostScript printer or imagesetter

For the $500 or so CorelDRAW retails for, you get over 150 fonts and a whopping 15 000 pieces of clip art. With a collection like that you can create some fairly impressive-looking pages even if you can t draw at all. I'd go as far as saying that it is worth buying CorelDRAW 3 0 and a CD-ROM drive just for its clip art and fonts alone OS/2, CTOS Unix OSF/Motif and Open Look and Macintosh versions are also available or coming soon

There are other programs worth consideration for DTP tasks too Users who will be creating primarily text-based documents might consider one of the many Windows-based word processors available that incorporate graphics features. All the top contenders — Lotus Ami Pro Microsoft Word for Windows and WordPerfect for Windows — include graphics-handling features Refer to the Oct. 92 issue of *The Computer Paper* for more details on these titles

### Hardware: PC

If you can afford it, I recommend a 486SX or 486DX machine that has the option of being upgraded with Intel s "Overdrive coprocessor" clock-doubler chip Machines already "clock-doubled" are known as a "DX2" This low-cost upgrade could come in handy if down the road, you feel the "need for speed." And if you get into working with long documents color scans, or complex object-oriented images, you will

How will a faster machine help? Graphically oriented applications such as desktop publishing or drawing programs will benefit greatly but the performance of other common applications, such as word processing spreadsheets and databases will also be greatly enhanced Did you know that programs like PageMaker and CorelDRAW do not benefit at all from a math coprocessor? Only applications specifically written to exploit a math chip such as AutoCAD 3D Studio Lotus 1 2-3 and Excel will make such an investment worthwhile

Sheer CPU (central processing unit) speed is not the only factor to consider A properly configured computer system should not have undue constraints in other areas such as hard disk video card or monitor size Here are a few common bottlenecks to watch out for

### Beware of:

A Slow or Low-capacity Hard Disk — How much capacity is enough? Try twice what you think you need. Look for a drive with a long (2 5- or even 5-year) warranty and as low a millisecond rating (9 ms is better than 19 ms) as possible I'd recommend at least a 14 ms 105MB drive for DTP purposes.

Some desktop publishers find that a removable SyQuest cartridge drive is a handy item to have as a secondary storage device A removable SyQuest disk can hold up to 44MB of data making backups of files easy and facilitating the transportation of large scanned images (etc ) to and from service bureaus virtually all of which have their own SyQuest drives SyQuest drives are, however somewhat prone to read-write errors, usually due to careless handling or dust contamination A SyQuest disk is not a good choice for primary storage

Optical drives are available at ever more-attractive prices (currently a 128MB optical drive goes for about US$1500) but I'd hold off for a while yet. The same goes for the so-called floptical disks (US$550), which are essentially 21MB floppy disks Maybe next year

Most IBM-compatible computers (and some models of Atari and Amiga) use a type of hard disk known as IDE, which stands for integrated drive electronics These drives have been discussed at considerable length in previous issues of *The Computer Paper* most notably the Sept 92 article "Planning for the Future" by Roedy Green

Slow Video — As regular readers are aware, I highly recommend getting a system with accelerated video The fastest available systems come equipped with built in display circuitry known as local bus video but accelerated video cards from ATI are a good choice for other PCs Cheapo VGA cards are a Bad Thing as are cheap keyboards bargain brand mice and "economy brand" cables All spell T-R-O-U-B-L-E.

*Continued on page 20*

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| Anagram Creative | 80 Parklawn Rd | Toronto | 253-2260 | 253 2207 | | Yes | Yes | 300 | Apple LW | Legal |
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| BG Communications | 258A Danforth Ave | Toronto | 465-2034 | 463-8720 | | Yes | Yes | 300 | GCC BLP II | Tab |
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| Campus Systems Group | 100 Harbord St. | Toronto | 925 2277 | 925-5308 | Yes | Yes | Yes | 300 | Apple LW | Legal |
| Copywell Graphic Imaging | 393 University Ave | Toronto | 585-9501 | 596-5809 | Yes | | No* | 1000 | Lasermaster | Legal |
| Corporate Data Services | #209-1200 King St. W | Toronto | 531-5003 | 531-5242 | Yes | Yes | Yes | 300 | Apple LW | Letter |
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| Creative Copy & Design | 46 St. Clair Ave. W | Toronto | 975-9317 | 975-0871 | Yes | Yes | Yes | | | |
| Crested Crown Graphics | 729 Gordon Baker Rd. | Toronto | 492-6819 | 492-6868 | Yes | Yes | Yes | | Apple LW | Tab |
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| Hunt Creative | #133-425 Britannia Rd. E. | Toronto | 507-3848 | | Yes | Yes | Yes | 600 | Seiko | Legal |
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| New Age Word Processing | 12 Raglan Ave | Toronto | 656-8257 | call 1st | Yes | | | 300 | HP II NEC | Letter |
| Page Perfect | 6019 Yonge St | Toronto | 488-4284 | 488-4675 | | Yes | | | | |
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| PrimeType | 172 John St. | Toronto | 591-6839 | 591-7180 | Yes | Yes | Yes | | | |
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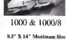

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| 3600 | Line 300 | 15.75" wide | 422 1440 | 1200 | 300 | QMS | Tab | 1600 | 300 | | | Yes | Yes | Yes | Yes |
| 2540 | Linotype | 12" wide | 253-2207 | 9600 | 300 | QMS | Tab | 1200 | 600 | Yes | | | Yes | Yes | Yes |
| 2400 | AGFA | 13.5" X 54" | 925-4880 | 9600 | 400/300 | Canon 500 | Tab | 600 | 600 | Yes | Yes | | Yes | | Yes |
| | | | | | | | | | 300 | | | Yes | Yes | Yes | Yes |
| 1270 | Linotype | 12" wide | 640-4810 | 9600 | No* | Canon & BM | Tab | | 300 | | No* | | | Yes | Yes |
| | | | | | | | | | 300 | | | Yes | Yes | Yes | Yes |
| 3366 | Lines | 11.8" Wide | 250-8647 | 9600 | 600 | Tektronix | Tab | 600 | 400 | Yes | | Yes | Yes | Yes | Yes |
| 1800 | Line200P | 12" Wide | | 9600 | 300 | Tektronix | 8.5" x 14" | 600 | 300 | | Yes | Yes | Yes | Yes | Yes |
| | | | | | 300 | Tektronix | Tab | 300 | 300 | | Yes | Yes | | | Yes |
| 2540 | Linotype | 12" Wide | 531-3682 | 14.4K | 600 | Tektronix | 12 x 18 | 300 | 600 | | | Yes | Yes | | |
| 3300 | Line AGFA | 22" wide | 362-9029 | 9600 | 400 | QMS Cannon | Tab | 600 | 600 | Yes | Yes | | Yes | Yes | |
| 2400 | AGFA, Lino 300 | 13" Wide | 875-6831 | 14.4K | 300/400 | QMS, Canon | Tab | | | | Yes | | | | |
| 2540 | | | | | | | | | 600 | | | Yes | | | Yes |
| 3386 | Lino 330/40 | 20X24/12x40" | 777-8418 | 9600 | 600 | QMS Ink | Tab | Hi Res* | 1200 | Yes | | | Yes | | |
| | | | | | 300 | Tektronix | Tab | | 300 | Yes | Yes | Yes | Yes | Yes | Yes |
| | | | 673-6479 | 19.2K | 400 | Versatec | 42"x 24 ft | | 300 | | Yes | | | | Yes |
| 2540 | | | | | | | | | | | | | | | |
| 2540 | Linotype | 12" Wide | 586-6064 | 19.2K | 300 | Teletyonics | 121 x 18 | 1200 | 1800 | | | Yes | Yes | Yes | Yes |
| 1693 | Linotype | 12" Wide | | 2400 | | | | | 300 | Yes | | Yes | Yes | Yes | Yes |
| | | | | | 500 | Seiko | 12 x 18 | 1200 | 1200 | | | Yes | Yes | Yes | Yes |
| 2366 | Lino 330,Scantext | 36" x 24" | | 9600 | 300 | QMS | Tab | 2000 | 1000 | Yes | | | | | Yes |
| | | | | | | | | | 300 | | | | Yes | Yes | Yes |
| 3386 | Lino 300/530 | 12" x36" | 667-7148 | | 400 | Tek, Calcomp | | 300 | 400 | | Yes | | Yes | Yes | Yes |
| 3386 | Linotype | 12" Wide | 532-5110 | 9600 | 600 | Canon Laser | Tab | 1200 | 1600 | | Yes | Yes | Yes | Yes | |
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| 2400 | AGFA 9800 | 18.3" x90 | | 2400 | | | | 600 | 600 | Yes | | Yes | | | Yes |
| 300 | Line AGFA | 14" wide | 591-7173 | 9600 | 300 | Calcomp | Tab | Hi Res* | 1200 | Yes | | Yes | Yes | | Yes |
| 3389 | Linotype | | 838-5072 | 9600 | 600 | QMS | Tab | 9600 | 600 | Yes | | | Yes | | Yes |
| 5080 | Line 330 | 12" wide | 380-8409 | 9600 | 500 | QMS | Tab | 600 | 600 | Yes | | | Yes | | |
| | | | | | | | | | 600 | | | Yes | Yes | Yes | Yes |
| | | | | | | | | | | Yes | Yes | | | | Yes |
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REVIEW

# IntelliDraw

BY GEOF WHEELWRIGHT

The fact that it was called "Spock" during its beta-testing period was no mistake. Now known as IntelliDraw, this new "intelligent drawing" software from Aldus subsidiary Silicon Beach Software is designed to bring the same kind of logic and common sense to the PC-based drawing and illustration world that the famous Vulcan science officer brought to the USS Enterprise.

As with most Aldus products, IntelliDraw is offered in versions for both Apple Macintosh and PCs running Windows. During our test of IntelliDraw, we were able to look at both versions — which were not only functionally identical but could easily accept one another's files.

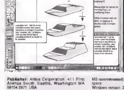
So what is IntelliDraw? To start with, it's a very capable Windows and Mac drawing package — with all of the object-oriented tools you would expect. These include tools for drawing lines, squares, circles, polygons — as well as an editable preview mode, slide shows, limited animation, graphs and limited page-design functions. But all of these functions can just as easily be performed with existing Windows and Mac drawing and illustration tools — although most would cost you more than the price Aldus is charging for IntelliDraw.

The real difference is the way in which IntelliDraw helps you build relationships between objects when you draw them. If, for example, you are drawing a typical PC display, the objects involved might include a couple of rounded rectangles (one inside the other), a couple of circles to represent the contrast and brightness adjustments and a square to represent the on-off button.

This sounds quite simple — until you start to consider the relationship that is required between the elements for the drawing to work. The inner rounded rectangle must be directly in the center of the outer one, the contrast and brightness knobs must be aligned together vertically and horizontally along the bottom of the outer rectangle, and the on-off button must be aligned to the lower right-hand side of the drawing.

Using IntelliDraw, you can define these alignments — or any other spatial or dimensional relationships required between objects — as connections or "links." Once such a link is made, then it is preserved — no matter how else you change the drawing. You could rotate, shrink or expand the size of it and still maintain the proper relationship and perspective between all the links.

Most drawing applications offer some way to establish a basic relationship between objects through a "group" and "ungroup" command — but few offer the ability to establish links as complex as those offered by IntelliDraw. Say, for example, you are designing a backyard pool and want to show the amount of entertaining space available by having deck chairs placed around the outside of the pool. The links function of IntelliDraw is powerful enough that when you change the size or shape of the pool, the number of deck chairs drawn around it will automatically increase or decrease to fill the available space.



The balloon help feature of the Mac's System 7 is duplicated in an info box for System 6 or Windows users.

**Publisher**: Aldus Corporation, 411 First Avenue South, Seattle, Washington WA 98104-2871 USA

**Main features**: Intelligent drawing package offers ability to manage links between objects, Symmetrigon tool for creating symmetrical shapes, Connectigon tool for drawing shapes linked to parts of other objects, handles multiple page documents, rotation of graphics and text, file sharing between Windows and Mac versions, unlimited number of drawing layers and templates provided.

**Page limit**: Limited only by memory and hard disk space.

**Imports**: TIFF, EPS, PICT and ASCII

**Requires**:
Mac version: Apple Macintosh Plus, Classic, Portable, Quadra, PowerBook, II series, SE/30, LC or Classic II with 2 MB of RAM (4 MB recommended) and 10.5 MB free hard disk space.
Windows version: 286-, 386- or 486-based PC running Windows 3.x, 2 MB of RAM (386-enhanced mode only, 4 MB recommended), 30 MB hard disk, EGA display adapter or better, Windows-compatible mouse.

**Recommended hardware**:
Mac version: Apple Macintosh Quadra, PowerBook 140 or 170, II series, SE/30, LC or Classic II with 4 MB RAM, System 7 and maximum possible free hard disk space (10.5 MB minimum).
Windows version: 386- or 486-based PC running Windows 3.x, 4 MB of RAM, 80 MB hard disk, VGA display adapter or better, Windows-compatible mouse.

**Minimum hard disk space**: 10.5 MB (Mac version), 4 MB (PC version).

**Price**: C$279

In addition to the powerful linking capabilities of the product, it provides some unique tools. One of these is known as the Symmetrigon — which allows you to easily draw symmetrical shapes without the need to join or duplicate pieces. Using this tool, we were able to create complex shapes for flower vases, multi-teeth mechanical gears and several other quite complex objects with a single-line stroke.

An associated tool is the Connectigon — which provides another form of intelligent linking for objects. It lets you link one polygon shape that — as you are drawing it — can be linked to another at various points. The two shapes are then linked — but only at the places where you have indicated with the Connectigon. Otherwise the two linked objects maintain separate identities and can have separate fills, lines, be independently resized and so on. And if one is reshaped, it will reshape the other object only where the two are attached.

Finally, a whole range of templates and clip art are shipped with IntelliDraw — almost a requirement with drawing packages these days, but worth noting in a lower-cost offering such as this. There are other interesting features in IntelliDraw; most, though, can be found elsewhere. In the case of the animation and presentation graphics features, a number of packages will do a better job for you than IntelliDraw, including Corel Draw 3.0 and even Aldus Persuasion.

### Verdict

If you want something that will aid you in doing complex drawings and illustrations — and trying out things that would be far more difficult to accomplish in other drawing packages — IntelliDraw is a good bet. It is easy to use, well-designed and offers a number of creative tools that allow the maximum possible flexibility.

It is, however, no substitute for full-specification drawing applications such as CorelDRAW, Aldus FreeHand or Micrografx Draw. It's also not the best tool for creating slide shows, animations or doing desktop publishing. With these limitations in mind, it is an excellent, worthwhile and innovative drawing tool. ■

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Aldus Fetch 1.0

# Aldus Readies "Fetch" For Macintosh: Digital Media Browser

SEATTLE WASHINGTON (NB) — Aldus Corporation announced at the Seybold Conference in San Francisco that it will start shipping "Fetch" in the fourth quarter

Fetch is a multi-user program for cataloging browsing and retrieving images animations, and sound files on the Apple Macintosh It is targeted at users in professional graphics work groups who purchase, create, and reuse art files and would like to catalog them in a mixed-media database Without a program such as Fetch a user would have to scroll through filenames or open and close source applications to find a particular image, according to Aldus

Fetch which Aldus acquired from Anaheim California based Provident Software in July, allows more than 100 users to simultaneously browse through a visual catalog of their files, able to see each image or movie as a thumbnail-sized picture You can also hear what each sound file sounds like

"Currently locating graphics files can sometimes take longer than creating them," says Fetch product marketing manager John Testament. "With Fetch production professionals will be able to catalog and retrieve their files almost instantly, then view them without having to launch other applications "

Fetch users can create a visual catalog of up to 32 000 digital-media files including clip art sounds photo images presentations and video clips Files can be stored and retrieved from anywhere on a network, and keywords and descriptions can be added

Aldus will catalog files in all standard Macintosh file formats, and can recognize several proprietary formats from other Aldus products, including Persuasion Gallery Effects, Illustrator, PhotoShop, and Multi Ad Creator Under Apple Computer's System 7 operating system users can add items to a catalog by dragging and dropping the file, folder or volume icon over the Fetch application icon

**Fetch users can create a visual catalog of up to 32,000 digital-media files, including clip art, sounds, photo CD images, presentations, and QuickTime clips.**

Aldus spokesperson Jill Miller told Newsbytes that Fetch will support Kodak's recently announced Photo CD, which stores pictures taken with conventional 35mm cameras on a compact disk The images can then be played on a TV or personal computer equipped with a CD-ROM XA, CD-ROM CDI or dedicated Photo CD player

Fetch will have a suggested retail price of C$359. Detailed information about licenses for volume purchasers will be announced when the product starts shipping in the fourth quarter OEM (original equipment manufacturer) versions of Fetch will also be available for publishers of clip art, photo QuickTime movies and sound clip collections.

Aldus will also run under Apple Computer's System 6 0 7 The company recommends an Apple Macintosh SE/30 PowerBook 140 or 170 II series, or Quadra, 5MB of RAM and a hard drive Minimum configuration is a Mac Classic SE LC or PowerBook 100 4MB of RAM and a hard drive

Contact Aldus Info Centre 1-800-333-2538 or 416-340 1288

"Mavis, it's me I'm calling from my portable phone"

# DATA SECURITY

**Data loss can happen for a number of reasons and in many cases it depends on the software being used. Some software is more prone to data corruption than others.**

Blessed is the pessimist for he hath made backups.

Exasperated 1 24

Power surges while the computer is updating the main disk directory can cause the entire hard disk drive to become unreadable. Index files in large databases can get corrupted making the data unavailable. Or worse, a user will inadvertently delete a file or series of files.

If a file is accidently deleted it can be retrieved if data recovery is initiated immediately. In most cases where index files become corrupted they can be restored and the data made available again. In the case where a complete data loss occurs there are options available to recover from this disaster.

Data recovery services in the United States will attempt to recover data from a crashed hard disk. However, they are usually not able to recover all the data on the disk drive. The cost for this service is around $2500 for a 30-megabyte hard disk drive.

The cheapest alternative is to have in place an effective data backup program. In this case, even with the complete loss of a hard disk drive you can replace the data on a new hard disk drive for under $500. The following technique should be adopted by any business or organization using a computer and it should be followed rigorously and without deviation.

There are two methods you can use to back up your data. You can use the DOS BACKUP command to back up your data onto floppy diskettes or you can use a cartridge tape system. Which method you use largely depends on the amount of data to be backed up and your budget. For under 10 megabytes of data, using DOS's BACKUP command is a viable solution. It would take approximately 10 high density diskettes and about 15 minutes of time. When the amount of data to be backed up is greater than 10 or 15 megabytes then a cartridge tape drive is a more attractive alternative.

With today's high-capacity hard disk drives it can take over an hour and a half to back up an 85 megabyte hard disk drive not to mention 80 high-density diskettes. A cartridge tape system will back up 85 megabytes of data in less than half an hour and most systems can be set up to do the backup unattended.

Whichever method used, the basic technique is the same. It involves making three, maybe five, complete sets of backup data. The number of sets you use depends on the value of your data.

A company engaged in heavy transaction processing will have a backup set for each day of operation in the week. These sets would be labelled Monday, Tuesday, Wednesday, and so on. Another firm operating in a batch mode and doing file updates or billings three times a week would have three sets of backup data, labelled A, B and C. Each set will consist of a number of floppy diskettes or cartridge tapes capable of containing all the data that has to be backed up.

The first time you make a backup use the first set labelled A. Keep a log of the data and set that was used to back up your data. The next time you back up your data use the next set, and again make a record in your backup log. When you have used the last set of backup media then you start all over with the first set again.

This technique allows you to reconstruct your data back to the time when the last backup was made. Don't forget though sometimes the backup media itself can go bad. Then you would go back and use the backup set prior to the last backup made. The chances of all three or five backup sets being bad is extremely remote.

While rotating through the data backup sets don't forget to replace the media occasionally. You don't have to replace all three or five sets of media at the same time, but once a month you could replace one of the sets and relegate the older media to a less-critical task.

Quite often when things don't go the way they should people start to make backups. THIS IS NOT THE TIME TO MAKE BACKUPS. You will be overwriting a good backup disk with corrupted data.

Now you are well-armed to combat data loss due to any cause. At most you would have to re-enter data added since the last time you made your backup. Your backup log comes in handy here as you know exactly when the backup was made.

Remember, the most expensive part of your computer system is your data. Hardware can be inexpensively replaced, software can be re-installed, but the data carries an extremely high value. If one person on your staff spends a year entering and maintaining your data, then the value of that data is at least that person's salary. Most people unknowingly attach high value to their computer hardware and very little value to the data stored on it. ■

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# LOOKING INTO HARD DRIVES

## RAM and your Hard Drive: Your Mind & Your Filing Cabinet

BY ROB MAYHEW

**Many beginning computer users confuse themselves at least a little trying to figure out the difference between Random Access Memory (RAM) and the hard drive. It's not surprising, both store information for the computer's use, and both express their capacity in similar terms. This article should demystify some of that for you, and maybe help you remember which is which and how they relate to each other in the scheme of things.**

Let's start with RAM, which is an acronym for Random Access Memory. Today's IBM-compatibles usually have a minimum of 1 MB (that's 1 megabyte, or the electronic equivalent of 1,048,576 characters), of which the first 640K (1K=1,024 characters) is available for your system's input/output and internal operating instructions, your programs and the data they need or produce. The next 384K is reserved for a sort of mental scratchpad space for your system, so it has room to keep track of things like what's supposed to be on your display and other such things that I don't really want to get into right now. More powerful systems have additional memory space as well (extended or expanded memory), but we won't get into that either.

That didn't help much, did it? Let's find some analogies. Look inside your mind (most people have one) and think about the stuff you carry around with you in there.

You've got your I/O (input/output) systems, which let you make sense of what you see and hear, and tell somebody else about it. You've got an operating system, which lets you walk around without falling down — and without requiring that you think very much about it, even when chewing gum at the same time. You've got your program instructions, which you went to school for years and years to learn, so that you know how to solve the problems that come up from day to day without having to go dig up a textbook. You've also got in your mind all that information that you've picked up along the way — data like the number of ounces in a pound, and your maiden aunt's birthdate. Or more important stuff, like the approximate amount of your next paycheque, and how much of that is going to go to the landlord for rent.

Maybe you can see some parallels between the last two paragraphs. The first was a summary of what's in a computer's random access memory; the second was a description of some of the departments in your mind. RAM is, in a sense, your computer's "mind," or at least the place where it thinks about what it's doing and whether or not it's going to do it for you.

If you really want to know, it's contained in a bunch of multi-legged silicon chips somewhere in your machine. Your computer can look at the data stored on those chips very quickly — access times are usually rated at somewhere under a tenth of a microsecond. Yes, you heard me right — less than a ten millionth of a second. And like the contents of your mind, most RAM is "volatile" — pull the plug on it, and it's gone without a trace.

Now let's look at your hard drive. Think of it as a floppy drive that has awesome capacity, and uses disks you can't see or remove (trust me, they're there!). It's where you keep the programs and data files you're not using at the moment. A hard drive holds far more than RAM — 80 MB isn't a big hard drive any more, and the biggest drives for desktop computers now run up to more than 15 times that capacity. ➤

The usual desktop computer today has a hard drive storage capacity that is 20 to 50 times its memory capacity. That's why the term "mass storage" is sometimes used for hard drives, although that term generally refers to any device that stores significantly more program/data material than can be read into RAM at any one time — just as your filing cabinet contains far more than most people care to remember at any one time.

The information on your hard drive is "non-volatile" — it doesn't disappear when you switch off your computer any more than do the contents of your filing cabinet when you turn out the lights.

Like digging for information in your filing cabinet, it takes the computer far longer to look at what's on your hard drive than what's in memory. Average access times for the best hard drives today are around 1 hundredth of a second — a figure which is about 10,000 times slower than RAM access time. Also, it can take several seconds or more to read a whole file, particularly if it's large and/or scattered all over the surface of the hard drive.

**The information on your hard drive is "non-volatile" — it doesn't disappear when you switch off your computer any more than do the contents of your filing cabinet when you turn out the lights.**

There's more. You've got to read the stuff in your filing cabinet before you can use it. You don't process the information in that cabinet without getting it into your mind first — and it's in your mind that you do your work. If that work results in changes to the some of the contents of your filing cabinet, first you have to put the contents of your mind on paper. Then you put the paper in the cabinet (after you've run out of room on your desk and the floor of your office).

Your computer works the same way. Before it can start doing work for you, it must read an appropriate program (and maybe some data) on your hard drive, and copy that into memory (RAM).

Let's assume you wanted to make some changes to an existing spreadsheet. After loading Lotus 1-2-3 (or whatever), you must read the spreadsheet into memory. Then, any changes your program makes are made to the copy in RAM, not to the file on your hard drive.

It's as if you photocopied a letter in the file cabinet that you wanted to edit, and made your changes and your additions to the photocopy. All those changes and additions are only in your computer's mind (and yours, presumably) until you save your work.

Then, most programs will simply write the changes over the original file on your hard drive; some will ask you if you want to save the unamended original as well as a backup. To use the filing-cabinet analogy again, many programs will electronically throw out the original document, and put the revised one in its place under the same name.

Some will give you the option of putting the revised document into storage along with the original under another name. But one thing to remember is that none of this happens until you "save" your work; until you do, what's on your hard drive is what was there when you started — all the new stuff is in RAM alone, and will go straight to the Great Bit Bucket in the Sky if your computer loses power or crashes before you save your work. (Moral? Save your work to your disk drive often — and particularly before you print or switch tasks.)

Perhaps the best way to keep it all straight is this: think of RAM as "memory," because that's exactly what it is. (And don't forget how easily it can be forgotten until it's written down — in the hard drive.)

Think of your hard drive as a humongous floppy drive, because that's what it is. It isn't memory, it's a filing cabinet. Think of your hard drive as a storage facility that supplies programs and data to RAM on demand — and remember how much more room it has than your computer's memory.

Think of the two that way, and you won't be likely to confuse them again — and you won't embarrass yourself in front of the office "rocket scientist" either. ■

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PC SOFTWARE REVIEW

# DrivePro,
## Professional Hard Drive Set-up Software

REVIEWED FOR NEWSBYTES BY THOM FOULKS

**Runs on:** For 286-, 386- or 486-based PC-compatible systems with hard disk drives (not for XT 8088 or 8086 computers). Requires DOS 3.1 or higher; runs from 1.2MB or 1.4MB distribution disk.

**From:** MicroHouse International, 4900 Pearl East Circle, Boulder, CO 80301. Tel: 303-443-3388 (Orders 800-926-8299), Fax 303-443-3323, BBS 303-443-3957)

**Price:** Suggested Retail: $129 US

Rating: 3.9 (on a scale of 1=lowest to 4=highest)

**Summary:** A versatile, high powered, hard drive set-up utility of interest primarily to technicians, but well worth a look from DOS "power users."

Once upon a time, when all PCs came in a big metal box and hard disk drives were their heaviest internal component, setting up a drive was a comparatively easy task. All drives used an ST506 interface, all controller manufacturers mimicked Western Digital's controllers, and one needed to do only a couple of cryptic DEBUG commands to install a drive. Yes, intimidating to a casual user, but every PC user group had a handful of gurus who could be called upon—the necessary steps could be learned in a phone conversation.

Then came RLL — and ARLL — and ESDI, followed rapidly by SCSI (in several flavors), and today's popular IDE interface. (For those who really want to know what all those initials mean, a brief glossary appears below.) Handling set-up on a hard drive not only became a mystery to befuddled casual users, but even to some computer repair shops as well. The drive units themselves shrunk like new blue jeans in hot water, until — today — it can be hard to actually locate and identify the drive within the CPU unit.

If you can't even locate the drive easily, you certainly can't identify its model number; and, without that, it's anyone's guess how many tracks (cylinders), heads and platters a given drive unit may harbor. A drive can be damaged by misidentifying it to the machine's CMOS set-up routine.

Contained on just one floppy disk, DrivePro solves those problems, all of those problems for most drives, and most of those problems for the rest of the drives! No more DEBUG. FDISK partitioning can be automatic. No more separate DOS format operation. DrivePro even handles writing the CMOS set-up information, meaning any machine (even old ATs) can have user definable drive types. As a final fillip, it offers the user an opportunity to save all the drive's master boot information to a floppy — from which it can be restored in emergencies.

My evaluation of DrivePro involved its use on six different hard drives, three different types of HD controllers — from ST506 to ESDI to SCSI — installed in a 286, a 386 and a 486. In each case, it performed just as promised. MicroHouse's designer of DrivePro, Doug Anderson, told me the software can identify more than 1800 drives. That includes all PC drives from 1984 to present, says Anderson. (Updates to DrivePro's information are available to registered users, from the MicroHouse BBS.)

Aside from drive set-up routines, DrivePro also includes a superb performance/diagnostic sequence which can warn of potential troubles long before everyday drive use brings it to a crash. Also included, for real power users, is a boot code assembly editor, and a boot code replacement which permits booting from a choice of disk partitions.

### Rating

PERFORMANCE (3.7) As noted above, DrivePro performed as promised, and quite well at what it did. However, I found the program's handsome character based interface a real challenge to use. The problem is heavy use of the ESCape key to move among menus; more than once I suddenly found myself exiting the software, when that wasn't what I intended—with no turn around "Exit (Y/N)?" option. Additionally, on a machine with two hard drives, DrivePro leaves the user very confused over which drive is being accessed until you're ready to begin a given routine. Here, there is a "fail-safe" turnaround — but it's more than a little scary when you tell DrivePro to start a destructive low-level format, and you're not positive which drive is being accessed. (The choice of C: or D: drive is the last item in the selection routine.) On the other side of the coin, DrivePro would not let me attempt an operation on a drive which I

*Continued on page 32*

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Stan Miastkowski
(*Byte*, April 1992)

Rated by *PC Computing*, June 1992 as the 2nd and 4th Best Drives

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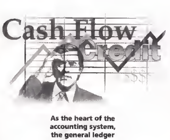
# Converting to a Computerized
# Accounting System:
## The Benefits

BY ERIC HOY



Is your business still operating with a manual or outdated accounting system? If so it may be time to re-examine what is in the marketplace and make a change. In today's business environment, information is king, information allows informed decisions to be made regarding financing, pricing and marketing. A good computerized accounting system can provide your organization with the information to operate more efficiently and effectively.

The following are some of the tell-tale signs of problems or inefficiencies in your current accounting system.

- Information is not available when it is needed
- Information is simply not available or too costly to obtain
- Information is inaccurate or incomplete

These may result in a number of problems, including

- Increased cash-flow problems through poor accounts receivable, accounts payable and inventory management,
- Increased delinquent accounts;
- Reduced credit with bankers and vendors;
- Overstocked or understocked inventory
- Uninformed management and sales staff resulting in poor decision-making and missed opportunities
- Reduced market share,
- Increased audit and accounting fees,
- Increased visits from Revenue Canada.

Computerizing your accounting operations with a solid accounting package can alleviate many of the above problems. Some of the major benefits of computerization include

### 1. A reduction in the amount of bookkeeping time required

The preparation of a manual trial balance may take hours or days because information needs to be transferred from the journal to the ledger to the trial balance and to the financial statements. With a computerized system the same information is available with a few keystrokes. The key point is that once a transaction is entered, it is available in any report that needs it.

Typically good accounting packages allow transactions across accounting modules to be "integrated." This means that once a transaction is entered in one module it flows through to all other modules requiring it. Take an order-entry system, for example once an order for inventory is entered and posted in the "invoicing" module, an invoice is automatically generated the inventory is depleted in the "inventory control" module an entry is made in the "accounts receivable" module for that customer, and all accounting records are updated in the "general ledger" module.

**As the heart of the accounting system, the general ledger tracks all financial transactions affecting your organization. A good general ledger can replace manual cashbooks and synoptic journal.**

### 2. Improved timeliness of information

A list of customer receivables can now be prepared in minutes instead of days. Delinquent accounts can be tracked down quickly resulting in immediate improvements in the bottom line. As well, financial statements can be prepared upon request resulting in more informed financial decisions.

### 3. Improved accuracy of information

In a computerized system information is only as accurate as what is entered (the old axiom "Garbage In, Garbage Out" applies). One of the accounting controls to ensure that data is entered correctly is matching manual adding tape totals to computerized batch totals. Once the transactions are correct and posted, the computer takes over footings and totals. The result is financial statements and reports which are accurate — down to the last penny.

### 4. Improved quality of management information

Decision making is a fine art which affects the performance of an organization. Decisions however, cannot be made in isolation, there must be quality information. A good computerized system treats your information as a variable which can be manipulated and reported in any number of ways. Take sales, for instance properly implemented the system should produce reports on sales by salesman by territory, by product line by region by fiscal period, in detail or summary.

Most businesses process various types of transactions throughout the month. These transactions can be characterized as belonging to one of five specific groups

Sales and collections
Purchases and payments
Payroll and personnel
Inventory and warehousing
Capital purchases and repayment

A quality modular accounting system can effectively streamline the processing and tracking of transactions in each of the above groups. The most common accounting software modules used in business are:

### 1. General Ledger

As the heart of the accounting system, the general ledger tracks all financial transactions affecting your organization. A good general ledger can replace manual cash books and synoptic journal, allowing source journals, ledgers and financial statements to be printed upon request, in any format desired. Transactions for the entire year, for any account, should be available at the touch of a key.

### 2. Invoicing and Accounts Receivable

Sales and the collection of cash is the lifeblood of any business. A good invoicing

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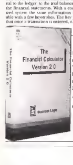

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*Continued from page 28*

program will bill customers, update inventory and track GST. A good accounts receivable system will track the invoices for each customer, age them accordingly, print monthly statements for collection, and receipt the cash collected. The amount a customer has purchased, the amount still outstanding, and the specific invoices unpaid should be available at a keystroke.

### 3. Accounts Payable

Good cash management means keeping track of your purchases and knowing when to pay your bills to take full advantage of vendors' terms and discounts. A good accounts payable package will track vendor invoices, forecast cash requirements, issue computerized cheques and allow a detailed bank reconciliation to be performed. At any time the amount of purchases from a vendor and the outstanding balance should be available.

> **A good accounts peyeble peckege will treck vendor invoices, forecest cash requirements, issue computerized cheques and ellow e deteiled benk reconciliation to be performed. At eny time the emount of purcheses from e vendor end the outstanding balence should be eveileble.**

### 4. Inventory Control

Inventory is a valuable asset of the company which must be carefully monitored: too much inventory means excess carrying costs, but too little inventory means unhappy customers. A good inventory system should have a flexible numbering structure and allow goods to be tracked in various units of measure (feet, lbs, doz, etc.). For each item the system should track the quantity on hand at each location, name of the supplier, amount paid, and the selling price. Reports detailing slow-/fast-moving items, sales to date, and margins should also be available.

### 5. Payroll

Preparing the payroll manually can be a time-consuming process, especially for a large number of employees. A computerized system can reduce the amount of work by calculating all statutory deductions and automatically printing out your pay cheques. Most payroll systems are fairly sophisticated, allowing specific types of income and deductions to be calculated and tracked. Most systems will also accommodate hourly or salaried employees, generate remittance forms, records of employment and year-end T4s.

### 6. Fixed Assets Management

Managing the fixed assets of an organization can be a major task. A computerized system tracks each asset, assigns it to a class for grouping purposes and tracks its location and cost. Most systems also automatically calculate depreciation charges in each group for posting to the general ledger.

### Selecting and Implementing the System

Selecting and installing a new accounting system can be a major undertaking for any organization. There are a number of factors to consider, including:

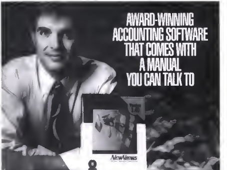
- determining organization and user requirements
- determining hardware requirements including networking
- evaluating software relative to user needs
- determining total costs of installation
- deciding on the software vendor and evaluation of commitment to ongoing upgrades and support
- deciding on implementation team and outside consultants
- scheduling implementation and data conversion
- preparing new list of duties, procedures and controls
- scheduling staff training time
- evaluating results of implementation and follow-up

Although the staff of an organization may be able to implement the above steps without outside assistance, it may be prudent to enlist the help of an outside consultant or accountant if the system is fairly complex and a short implementation schedule is a necessity. ■

### About the Author

Eric Hoy is a Certified General Accountant and Manager of Computer Systems Consulting with Equity Business Services in Vancouver. He has more than seven years of information technology experience in the management consulting groups of several large national accounting firms. His areas of specialty include system conversions and installation, support and training for Accpac Plus and Novell Network systems. He can be reached at 604-874 9080.

**For more on accounting turn to page 39.**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# A Brief History of the BBS

## Part 2 of 2

Network mail, or net mail, is a very important development in BBSing. Tom Jennings, who invented Fidonet, established an inexpensive way for electronic mail to get from place to place.

All the messages going from one place to another would be compressed into a "packet." This packet would be transmitted usually in the middle of the night when long distance rates were lowest. The contents of the packet would then be extracted and sent to the proper "mailboxes" at the destination.

Fidonet then began what is called "echomail." Instead of this being private electronic mail sent directly to individuals, it would be sent to everyone — rather like a broadcast. There would be number of different "channels" in the broadcast, each having its own topic.

These messages would appear in the corresponding topic-related message area, or conference, on BBSes all over the world. At the beginning the topics were computer related but things began to change as more people with wider points of view began to get involved.

Today there are dozens of networks containing thousands of conferences on everything from biotechnology, religion and the peace movement to The Simpsons and the '60s TV show The Prisoner.

These networks provide a wealth of information and ideas on a global scale. They represent an entire army of on-line experts and a library of facts. It's a multinational, multicultural forum for open and free discussion (most of the time).

### The Shareware Explosion

Everyone has heard of shareware but not everyone knows what it is. BBSes are the main distributor of shareware and have played an important role in the success of the idea.

How shareware works is simple. Let's say I write a database of Royal Doulton figurines, complete with current asking and bidding prices. I know some people who would kill for such a program but most of us probably yawn at the idea of owning such an obscure piece of software — software publishers included.

The chances of getting my software published are non-existent. Not only that, but if I do find someone to publish it they'll pay me a royalty of less than a dollar per copy.

Hoping to make some money from my efforts I decide to publish the program myself. I post it on bulletin boards and instruct the users of my software that after 90 days of use they must register it for $20.

For every registered user I provide a printed manual, technical support, updates and other benefits people expect when they buy commercial software. I've paid no money for advertising and no commissions to distributors. The entire $20 is mine. I make enough money to live, keep up my good work and everyone is happy.

Today hundreds of commercial-quality shareware programs are released every month. Groups like the Association of Shareware Professionals have sprung up to approve and distribute shareware programs and to monitor their distribution to make sure no one is trying to pass the stuff off as commercial software at commercial prices.

### BBSing goes graphical

BBS software has always been a generation behind other types of software. Today a lot of BBS software is still command-line driven, meaning the user has to type in (and remember) a series of commands to make the BBS do what they want.

Some BBSes have advanced a little more with single key menus, dropdown menus and similar techniques but they're all still text-based. Recently there have been some advances, one of them being First Class, a BBS program from Softarc in Toronto that runs on a Mac.

First Class uses a graphical interface. Because of this you need to use a proprietary terminal package (available for free) to use the BBS. First Class allows you to click on an icon to activate a function instead of typing in a command or selecting an item from a menu.

For example, to join a conference you click on the icon for that conference (you'd get a tree for an environmental conference, a plate for a food conference, etc). Once you select that conference another window opens, showing a list of messages. You read the message by clicking on an item in the list.

You can cut and paste between windows to pull quotes from one message and drop them into another. You can be doing several things at once — downloading a file on one window, chatting in another and writing a message in yet another. The integrated terminal program does it all.

There are several programs like this in the works now, some are for Windows and some for the Mac. One of the main problems is that you need to use a terminal program that's specifically written to work with a particular BBS program — meaning you could soon need as many terminal programs as the number of BBSes you call.

Graphical BBSing is sure to be a big hit, especially if it's multitasking like First Class.

One of the drawbacks of graphical BBSing is that more data needs to be sent over the phone — the information you want, plus all of the control codes to make windows pop open and closed, scroll bars, etc. Making any effective use of graphical BBSes, if you're impatient like me, definitely means buying a very fast modem.

### Multimedia BBSing

Icons and scroll bars are nice, but what if you want to play a great on-line game — one with full high resolution graphics, music, sound samples and other goodies. With a VGA screen taking up a few hundred kilobytes, sending this information in real time is impossible.

A 100K GIF would take about one minute to download using a 14 400bps modem. If you were playing a game, one minute would be far too long to wait to get the next image.

Fracterm is available from Cardz in Richmond, B.C. What it does is take downloaded images that were compressed using fractal technology and display them on the user's screen. Our 100K GIF becomes about 10-20K in size, depending on the complexity of the image. This image can be downloaded and viewed in approximately 15 seconds.

In order for BBSing to advance any further we are going to have to speed up the rate of data transfer by either getting faster modems or by incorporating powerful data compression techniques.

There's no reason why BBSing can't get to the level where we can get live video and CD-quality sound over our modems. It's just a matter of time. ■

**DTP** *Continued from page 17*

### What to Look For:

1) An "Editor's Choice" or similar rating in *PC Magazine* or another major computer publication. I would look for a company that had a good reputation for customer satisfaction and technical support. If the tech-support number is toll-free — even better.

2) If the system is not already a DX2 (a.k.a. Intel Overdrive Coprocessor)-equipped model, it should at least have the ability to have its CPU upgraded without replacing the entire motherboard.

3) Accelerated video, with at least 32,768 colors. Video boards with 15- or 16-bit color are sometimes called HICOLOR boards. If you want the best available, get a good-quality accelerated 24-bit display board. Experts say that the 16.8 million colors these boards can display are about the maximum number our eyes can distinguish. A few models of the latest generation of PCs (and Macs) have on board video that provides premium performance with up to 24-bit color.

Eight-bit (256 color) VGA is not enough for any serious color graphics, especially if you plan on using gradient fills (blends) in programs like **CorelDRAW**, or scanned color images. If you plan on purchasing a gray-scale display (i.e., not a color monitor), then the 256 shades of gray displayed by an 8-bit display card are adequate.

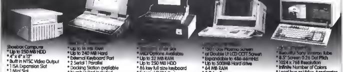
4) A large-screen monitor. Get one that can display a full page at actual size without scrolling. Your productivity will double. This is especially important for PC users. Mac users can add another display card and monitor (up to six), and each monitor acts like a "window" looking into one large desktop. Pages can thus be stretched over two or more monitors — a different window can even be viewed on each Mac monitor simultaneously. The PC does not enjoy this luxury.

The working area of a PC's screen rapidly fills up with Windows' menu bar(s), tool palettes, and the like. I'd recommend at least a 18" screen for doing DTP on a PC. The NEC 5FG and the Radius Pivot are both good choices.

### Quality, not Price

When you are purchasing (or upgrading) a computer, remember that "bargain-priced" systems are configured with the cheapest

*Continued on page 32*



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**DTP** *Continued from page 31*

possible components. It is important not to base a purchase decision on "similar" components, such as buying the less-expensive of two systems that both advertise "color VGA monitor, graphics card, 40MB hard drive, keyboard, (etc.)" All of these components are prime examples of the areas in which price-oriented vendors may cut corners. If you shop around for "the best price on a 486" (etc.), you are likely to be offered a system that contains poor-quality parts, shoddy workmanship.. or both. Caveat emptor

### Which Computer?

1) First, determine what it is you want a computer to do for you, then find the software that best performs the task(s). You may find that a Mac, Amiga, NeXT or other computer is a better choice than a PC. And then again, you may not. In the area of desktop publishing, for example, the Macintosh is often regarded as the best choice. The fact is that the PC can do most — if not all — of the same functions; however, the ease with which they are accomplished on the Mac is worthy of consideration. Despite what you may have heard or read, Windows is a lot more complex to configure and maintain than a Mac — especially when it comes to PostScript printers and fonts.

It is no coincidence that the vast majority of service bureaus and graphic designers use Macs. Many times I have witnessed PC "experts" struggle to perform common functions that the Mac makes easy, such as communicating with a networked printer, installing fonts and configuring extra memory. This is not to say that the Mac design is perfect. The standard keyboard (the one without function keys) is a very poor design, with particularly awkward positioning of the cursor keys. Despite the fact that most PC users have never had a use for the

Continued on page 40

**Drive Pro** *Continued from page 26*

had deliberately misidentified

USEFULNESS (4.0) No computer technician should be without DrivePro in his or her software toolbox, if only for the immense amount of hard drive information contained in its runtime database. It's also a must item for power users who — like this reviewer — deal with several different types of drives regularly. (DrivePro even correctly identified one of my drives which I had long ago wrongly set up in the machine's CMOS.)

MANUAL (4.0) The 180+ page manual is succinct, well-written, well-indexed and contains graphic illustrations of the run time menus with explanations of each function to be performed. The manual includes a 35-page glossary of hard drive terms.

### DRIVE TYPE GLOSSARY

ST-506/ST-412 — Seagate Technologies' original (1980) interface for a 5 MB drive, emulated by many other manufacturers.

RLL — "Run Length Limited" — a data encoding scheme which effectively increases the capacity of many drives.

ARLL — A variation of RLL, most frequently seen on ESDI drives.

ESDI — Enhanced Small Device Interface—faster data transfer, more error checking than ST-506 drives.

SCSI — Small Computer Systems Interface — a loosely defined set of standards followed in part by many manufacturers, Apple most prominently. On PCs, frequently used for CD-ROMs as well as HDs.

IDE — Imbedded Drive Electronics — Today's most popular HD interface among manufacturers. It places most of the drive's controller electronics on the drive itself, thereby avoiding the need for expansion slot cards. ■

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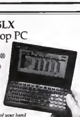

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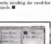

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# Newsbytes

## No Performas Yet

MARKHAM, ONTARIO (NB) — Canadians won't get the chance to buy Apple's new Performa computers before early next year, and it is not absolutely certain they will be offered here then.

Wayne Arcus, vice-president of marketing for Apple Canada, said his company is "evaluating" the Performa line for launch early in 1993. The new machines were initially launched only in the United States, he said.

Apple introduced the new line of Macintosh machines, aimed at the home market, on September 14. The company also expanded its distribution strategy, electing to sell the new series through department stores, consumer electronics outlets and office suppliers.

There are four Performa models: the Performa 200, the Performa 400, and the Performa 600 and Macintosh Performa 600 CD. The Performa 600 CD is Apple's first Macintosh with an internal CD-ROM drive. The CD-ROM drive reads a number of CD-ROM formatted disks and plays audio disks and also supports Kodak's Photo-CD technology.

All three Performas are based on Motorola's 68030 processor and come with four megabytes of memory and an 80 megabyte hard drive.

Apple Australia is also holding off launching the Performa line while it works out what marketing channels to use for the machine.

Contact: Apple Canada, 416-477-5800

## Sculley Outlines Apple's Publishing Future

SAN FRANCISCO, CALIFORNIA (NB) — Before a packed audience at the Seybold San Francisco computer publishing conference, Apple Computer CEO John Sculley outlined his company's plans for the next two years, including the intention to make high-end publishing products.

Apple would engage in a "strategic thrust in high-end publishing systems beginning in 1993," Sculley said. Apple, which started as a general-purpose hardware company, is moving into customizable systems — "a software-driven transformation." He promised that new technologies would be usable on the current Macintosh models.

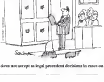
He said Apple technology is progressing from today's Macintosh, Photo CDs, imaging applications and printers to media servers and media databases in the next 18 months. In 1993, he specified, Apple will unveil new color scanners, color printers, and media servers, capable of delivering not only data, but video and sound to users.

In 36 months, he promised, Apple will unveil "compound document imaging systems" through Taligent, a company Apple formed with IBM. Taligent, he said, is "well along in its development." The compound document imaging systems being created will support the IBM 80x86, RS6000, and PowerPC platforms, he said. He said the foundation technologies for the next few years on the Apple platform include Quickdraw GX, which, among its other traits, enables documents to be reproduced on any other Mac, regardless of whether the receiving Macintosh has in it the fonts in the document.

Quickdraw GX is an imaging software architecture that will be delivered next year as an extension to the Macintosh System 7 operating system. Other foundation elements, said the Apple chairman, will be Worldscript, OCE — a communications function for use of e-mail and faxing within documents, Quicktime, and Applescript — a coming software capability which will allow the user to automate routine applications and which may herald the "intelligent agent" Sculley and others have been touting for several years.

The appearance by Sculley also featured free Apple Font Packs on every showgoer's chair in the auditorium at San Francisco's Moscone Center. The new font packs offer 25 new TrueType fonts and are now available at a suggested retail price of C$129.

Contact: Apple Canada, 416-513-5787



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## Apple, Motorola, IBM Said Close On New Chip

AUSTIN, TEXAS (NB) — Apple, IBM and Motorola will unveil the result of their first joint project, a working chip sample for a new line of Macintoshes and IBM workstations, months ahead of schedule, according to a report by the Associated Press.

The RISC "PowerPC" chip, to be made by Motorola, is termed the model 601, according to the report. The report says the companies, working in Austin, found they could speed up the development of the chip by combining work already under way at IBM with Motorola chip technology," according to executives who did not want to be named.

The report adds that IBM, Apple and Motorola will announce the PowerOpen Association to promote the use of their chips by other computer makers.

New For Macintosh

## FileMaker Pro 2.0

SANTA CLARA, CALIFORNIA (NB) — Claris has begun shipments of its highly popular flat file database program FileMaker Pro. The company is claiming that this release represents the next generation in the evolution of the product. There are over 50 new features that are being claimed as improvements or additions to this program which has been the most popular database product in the Macintosh universe over the past years.

Some of the main new features that this program provides are complete support of System 7. Claris spokespeople were saying that this program is now so cognizant of System 7 features and takes advantage of so many of them that System 7 Savvy is not sufficient to adequately describe this. They are referring to the program as being System 7 Omniscient.

In addition to the System 7 compatibility, another main feature of the new version is ScriptMaker. This is essentially a recorder of activities, or a Macro maker. The user can have the program watch what he or she does and then assign that to a key or a button on the screen. Once the key is clicked upon, that sequence of activities is initiated. In Claris parlance, this is being called "power without programming."

FileMaker Pro Version 2.0 for the Macintosh is shipping now. Retail price of the product is $399. Current owners of other versions of FileMaker Pro can upgrade to version 2.0 for $89. Claris plans to ship the Windows version of FileMaker Pro 2.0 in October. Claris claims that both versions look and operate in very similar ways, thereby establishing a new standard for how cross-platform applications should operate.

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## 100 QuickTime Movies From Animatics

OTTAWA, ONTARIO (NB) — Users of QuickTime-compliant software on Apple Computer's Macintosh can add to their projects animation clips and backgrounds from AniMedia, a QuickTime library put out by computer graphics and animation development firm Animatics.

AniMedia is made up of close to 100 brief QuickTime "movies" that can be imported into multimedia desktop presentation packages such as Macromind Director, Motion Works Promotion, HyperCard, SuperCard, and Aldus Persuasion, according to the vendor. A company spokesman said the clips are typically 30 to 60 seconds long and are comparable to moving clip art — the contents include waving flags, comic characters, spinning titles and so on.

QuickTime is a set of extensions to the Macintosh operating system that allows Mac users to manipulate video and sound. It is a key ingredient in Apple's strategy for multimedia development on the Macintosh.

All the movies can be edited, company officials said.

The AniMedia package also includes backgrounds in the PICT graphics format, which can also be used in multimedia presentations.

The package comes on four 800K-byte diskettes. The accompanying reference manual includes animation tips and a picture index, the vendor said.

AniMedia is Animatics' first packaged software product, the spokesman said. The company's business in the past has been custom graphics and animation, including projects for Apple Canada. AniMedia is being sold direct from the vendor in Canada and the United States.

AniMedia costs C$119. Self-running demo disks are available for $5.95.

Contact: Animatics, 613-236-9000 or 800-668-3890, fax 613-233-7157

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ABOUT THE COVER

# Techniques

BY GRAEME BENNETT

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This issue's cover photo of the Unity 1200XL plain-paper typesetter was supplied by LaserMaster Inc. (tel. 612-944-9330) as a 35mm slide. The slide was scanned using a drum scanner, producing a 17.8 megabyte TIFF image. I loaded this file into Adobe Photoshop running on a Macintosh Quadra 700 with 20MB of RAM, where I tweaked the brightness and saturation of the colors to (partially) compensate for the grey newsprint paper this issue is printed on. Before saving, I performed two final steps. I used Photoshop's "Unsharp Mask" filter to enhance the definition of the image and converted it from 24-bit RGB mode to CMYK. I have found that this greatly improves the color fidelity of jobs printed from other publishing and/or graphics programs (including Aldus FreeHand, which I frequently use to assemble and output the cover images).

After placing the TIFF image in FreeHand, I created the green border and other design elements.

I wanted the "Getting Started..." headline to look like it was flying into the center of the image. After experimenting with FreeHand's "text on a path" feature, I decided that I wanted letters that curved as the headline arced; FreeHand will not do this. I used Broderbund's TypeStyler to create the curved headline and exported the letters as (Adobe) Illustrator-format encapsulated PostScript file (EPSF) outlines, which I then imported into FreeHand. After closing the paths of each letter and using the program's Join command to create objects with holes for letters like "O", I joined all the letters on each line together, in essence, making the entire headline two joined objects — each with many holes. This allowed me to fill the letters with a single graduated fill. I used a similar Join technique to fill the TCP logo at the top of the page with one fill instead of many. This method is much more efficient — and prints faster — than using multiple "Paste Inside" operations to fill individual objects.

After placing the white oval and box on the page, I decided that a shadow effect would look good. I've always thought that simple "outline art" shadow effects look rather bogus, so I went back to Photoshop and applied a Feather command to the areas I wanted shadows in, and decreased the brightness of these areas about 80 percent. Voilà — Realistic shadows.

The final image was output at 101 lines per inch on a Linotronic imagesetter ■

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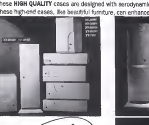

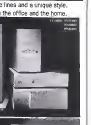

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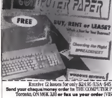

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**ATARI NEWS**

## Atari Demos Its Newest: The Falcon

GLENDALE, CALIFORNIA (NB) — Atari demonstrated the Falcon, its newly announced multimedia computer, to small but enthusiastic crowds at the Atari Show held recently in the Glendale Civic Auditorium, Glendale, California Atari's biggest claim for the Falcon is that it brings "print to-video" to the home user for less than US$2,000

The Falcon looks like the typical hook up to your-television and-play-games computer but Atari's Bill Rehbock, director of applications software had two Peripheral Land Incorporated (PLI) 1 2 gigabyte portable hard disks connected via a small computer systems interface (SCSI) II built into the Falcon, as well as a set of stereo speakers and two microphones — items your basic games computer couldn't handle

The Falcon has a Motorola DSP 56001 a separate digital signal processor (DSP) so the central processing unit (CPU) a Motorola 68030, doesn't have to handle the processing of sound Atari pointed out that the only other two currently available computers that come with a DSP are the NeXT and a Silicon Graphics workstation Rehbock demonstrated how the addition of the DSP enables the Falcon to play sound without tying up the CPU for other work by adding a one-second audio sound to each press of a key on the keyboard

In fact the audio capability of the Falcon enabled Rehbock to record his voice saying the name of several letters of the alphabet like "A," and assigning the recording to the upper- and lower-case versions of the corresponding keys on the keyboard. He was then able to type at a normal speed, while the Falcon played back in his voice the letters he was typing

Rehbock told Newsbytes any instrument that has an audio output such as an acoustic guitar or acoustic piano can be connected to the Falcon, and the output edited. The Falcon offers 50 kilohertz 16-bit sound Voice tracks can also be laid over the instruments, so a musician can record all the parts in his own voice, put the instruments in and put the whole thing together himself, Rehbock added.

Rehbock demonstrated the Falcon on the SC1224 a color monitor released for the Atari ST computer in 1985 An annoying flicker in the screen image was present and the same annoying flicker would be present when the Falcon is connected to a television set because the Falcon is outputting video graphics array (VGA) quality display output, Atari said The company is offering a $10 adapter so a standard VGA monitor can be connected to the Falcon but wanted home users to be able to use whatever they already had The flicker disappears during the display of video or games and is only present in the Atari user interface

Atari said with software such as Chronos Prism Paint, or a shareware program called Ray Shade home users can "print to video" titles and computer generated animation on top of video A video camera, a $120 adapter, and a video cassette recorder (VCR) are all that is necessary for a Falcon user to make their own titles and put animation over video or do special effects with still images, Rehbock told Newsbytes

A $200 digitizer and third-party software not yet available are required for editing of video images on the Falcon but Rehbock said the Falcon is fully capable of processing such video images The DSP also allows the processing of the images to be done independent of the CPU as well Atari added.

Rehbock demonstrated to Newsbytes 16-bit True Color at 24 frames per second on the Falcon (broadcast quality is 30 frames per second) Atari says the capability is 320 by 200 pixel resolution and 32,768 colors, or 640 by 480 pixel resolution and 256 colors from a 264 144 color palette Rehbock said the Falcon's DSP can decompress and display a 320 by 200 24-bit JPEG image in less than 1 second JPEG compression is not built in and neither is MPEG however a slot for a processor to do real-time MPEG compression is available on the Falcon and JPEG compression may be added as well Atari said

Two models of the Falcon will be offered at the end of October A $799 model will offer 1 MB of memory and a single 3.5-inch disk drive A $1,399 model will include 4 MB of memory and a 65 MB 2.5-inch IDE hard disk drive Atari said the unit will support larger capacity internal drives, but only in the 2.5-inch form factor It will support any size external drive via the SCSI II interface Atari added

Atari says it plans to demonstrate the video-editing capability of the Falcon at Comdex/Fall 92 in Las Vegas, Nevada in November though the company doesn't expect the software for video editing to be available until January or February of next year

Contact: Atari, tel 408-745-2082,
fax 408-745-2083

**APPLEBITS**

Apple is reportedly calling its forthcoming handheld systems "personal interactive electronics (PIE)." Apple executives said they had thought about calling the units "personal information systems" but the acronym didn't work.

## Commodore Announces Amiga 4000

PASADENA, CALIFORNIA (NB) — Commodore has announced its latest version of the Amiga personal computer, the Amiga 4000, expected to be released at the end of October. The Amiga is well known for its use in the television industry as the engine for Newtek's Video Toaster and the 4000 model appears to be building on that established market base.

The 4000 offers a faster central processing unit, the Motorola 68040, and a redesign of the three-chip set for display and animation of graphics in up to 256,000 colors from a 16.8 million color palette.

The screen resolution of the Amiga 4000 is 640 by 480 video graphics array (VGA), and there was some discussion as to why Commodore didn't go to 1024 by 768 video graphics array (VGA) resolution. No answers were immediately forthcoming, though company officials did say the Amiga is aimed at the video presentation and kiosk markets.

The 4000 will come standard with a 120-megabyte hard disk drive, 6 megabytes (MB) of memory, a dual-speed high-density 3.5-inch floppy disk drive, and CrossDOS for reading MS-DOS formatted floppy disks and drives. The 4000 includes a dedicated slot for video devices, selectable NTSC scan rate compatibility, four-voice dual-channel digital audio, up to eight sprites for animations, and hardware video overscan.

Commodore also announced AmigaDOS Release 3, a new version of the Amiga operating system which will ship on the new Amigas, the company said. CrossDOS is added to Release 3, as is a new installer utility and a PostScript printer driver.

Retail price for the 4000 is US$3,699, and some Commodore dealers are already offering discounted prices of around $3,000 to those who will put a deposit on a 4000 now.

Commodore is struggling with some U.S. software developers who say they will not support the Amiga further. WordPerfect Corporation has said it will support previous versions of WordPerfect for the Amiga, but will discontinue further development on any new releases. Commodore officials say the U.S. market is small for the Amiga, but the company has four million in its worldwide installed base.

Some talk on the part of Commodore was centered on the possibility of an Amiga laptop, but the company has not made a commitment to producing one.

The company also announced the Amiga 600 and 600HD for the home computer buyer to connect to a television set, an A570 compact disc read-only memory (CD ROM) drive, and Amigavision Professional Authoring System.

Contact: Commodore, 416-499-4292

## Commodore Launches 386, 486 PCs

TORONTO, ONTARIO (NB) — Commodore Business Machines has unveiled a line of four compact personal computers using the Intel 386 and 486 processors. The machines will not be sold in the United States, but will be marketed in the rest of the world, said Tom Shepherd, director of marketing at Commodore's Canadian operation.

The four machines have system units measuring less than 17 by 15 by four inches, according to Commodore. They use the AT bus (Industry Standard Architecture or ISA) and have five expansion slots and two full size drive bays. Each one comes with a 150-watt power supply, one parallel and two serial ports, mouse port, 101 key keyboard, a 1.44 megabyte diskette drive, and Super VGA video controller with 512K bytes of video random-access memory (VRAM). DOS 5.0 also comes with the PCs.

Shepherd said the major market for the machines will be in education, small business and the home, although they are certified for use with Novell networking software.

The first model has a 25 megahertz 386SX processor and comes standard with two megabytes of memory. It uses the Award basic input-output system (BIOS). Prices are C$1,049 with a 40-megabyte hard disk, C$1,159 with an 80 megabyte hard disk, or C$1,195 with a 105-megabyte hard disk. None of the prices include a monitor.

A second model uses the 33-megahertz 386DX processor and comes with four megabytes of memory and a 256K-byte random-access memory (RAM) cache. Prices are C$1,549 with a 120 megabyte hard drive or C$1,849 with a 213-megabyte drive.

This machine and the two 486-based models use the AMI BIOS.

The first of the 486 units has a 25-megahertz 486SX chip and four megabytes of memory. This model has 8K bytes of CPU cache. With a 120-megabyte hard drive it goes for C$1,725, and with a 213-megabyte hard drive it costs C$1,995.

The top of the line is a machine with a 33-megahertz 486 processor and four megabytes of memory. Other standard equipment includes 8K of internal CPU cache and 256K of RAM cache. It costs C$2,179 with a 120-megabyte hard drive, or C$2,449 with a 213-megabyte hard drive.

The PCs are available now in Canada, Shepherd said.

Contact: Commodore, 416-499-4292

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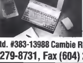

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CANADIAN NEWS

## Pen Computing, Virtual Reality In Show Plans

TORONTO, ONTARIO (NB) — Areas devoted to pen computing and wireless networking and a virtual reality showcase will be among the features of the 1992 Canadian Computer Show and Conference, scheduled for Toronto's International Centre November 23-26

Organizers also plan to have operating home office and mobile office displays, and a consultants' forum in which visitors will be able to discuss their business computing concerns with consultants one-on-one. Both of these features are being put together with the help of Arthur Andersen Consulting and the home office and mobile office displays will be sponsored by the national weekly newsmagazine *Maclean's*.

Robert Grainger, manager of the show, said this year will also see the continuation of the software center, which provides facilities for small software developers to demonstrate their products without the expense of bringing in hardware and booth materials.

A "pen-based technology village" will include demonstrations of "the latest developments in pen-based computing," Grainger said

At a preview press conference, reporters were treated to a demonstration of virtual reality technology that promises to be a crowd-pleaser at the show A pair of units put together by Toronto-based Virtuality Canada allow two players to battle in a simple simulated environment.

Standing on small, railed platforms, players have their movements recorded by an electronic belt and see their surroundings and their opponents on a helmet like display Visitors to the Canadian Computer Show will be able to play the game, which was also on display at the recent Canadian National Exhibition in Toronto.

Conference coordinator Karen Dalton outlined highlights of this year's conference They include keynote speakers Jim Manzi, president and chief executive of Lotus Development Harald Mirza, vice-president and chief database architect at Borland International and Theresa Myers president and chief executive of Quarterdeck Office Systems. Manzi will talk about groupware Mirza about object-oriented programming and Myers about advanced software technology

Gordon Eubanks president and chief executive of Symantec will speak about computer security on the first morning Other conference highlights include an address by Frank Clegg, president of Microsoft Canada, on software piracy and one by Paul Kennedy, president of International Data Corp (Canada) on "the disintegration of the information technology industry"

Show visitors can preregister for C$11 or pay $20 at the door The full three-day conference costs $395, with certain portions available separately for lower fees.

Contact: Industrial Trade and Consumer Shows 416-252-7791, fax 416-252-9848.

## Sanctuary Woods In New CD-ROM Deals

VICTORIA, BRITISH COLUMBIA (NB) — Sanctuary Woods is making a large splash with a bunch of announcements that relate to their distribution methods for multimedia CD-ROM programs.

The Awesome Adventures of
Victor Vector & Yondo
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In the most important of these releases, Sanctuary Woods has revealed an agreement reached with Sony of Canada under which Sony will bundle a Sanctuary Woods CD-ROM program with each Sony CD-ROM drive or drive mechanism that is sold in Canada between now and mid-December Sanctuary Woods will supply Sony with the Macintosh versions of their interactive fantasy game The Vampire's Coffin, which is the first in a series of games featuring Victor Vector & Yondo.

In other developments, Sanctuary Woods has announced that it will be supporting Tandy's VIS format for CD ROMs in addition to Apple's QuickTime format and Microsoft's MPC formats. Sanctuary Woods intends to have its first two titles converted to the new format in time for the Christmas selling season Company officials expressed hope that they would be able to have the CDs in time for display at each of Tandy's Radio Shack stores during the Christmas selling season Sanctuary Woods is also talking with non-Tandy distributors for the VIS format to ensure wide distribution of their products. Sanctuary Woods is attempting to convert both The Vampire's Coffin and Shelley Duvall's "It's a Bird's Life" to this new format.

The company has also announced distribution agreements with Compton's NewMedia, Soft-Kat and Educorp All three organizations will distribute the company's products to their respective resellers and dealers.

Finally, Sanctuary Woods is attempting to prepare a line of products for future releases The Vampire's Coffin is being converted to the MPC format with a projected release date of December The next title in the Victor Vector and Yondo series is being planned for February '93 in the Macintosh format. It will be called The Dinosaur Egg And Sanctuary Woods has a third title in production out of the 20 that it plans to ultimately market Each of Sanctuary Woods' titles will retail for $59.95.

Contact: Sanctuary Woods 604-380-7582.

### ACCOUNTING

# Keeping The Numbers Straight

### BY ALAN SALMON

**The key to success for any business is cash flow management and while more and more businesses are moving to computerize their accounting many people don't realize that they can have both in the same package. One of the first purchases that a small business often makes is a PC-based accounting system. This article will look at the key factors that should influence accounting software selection; identify the players in the Canadian accounting software industry; and provide you with a snapshot of the current programs being offered by these companies.**

The right accounting system can provide important financial information about your business. Rather than waiting for an accountant to deal with a pile of bills and invoices, the right accounting package will help you manage your cash flow, make sure you take advantage of discounts and help you collect overdue accounts. At any given time you will know the financial health of your business.

In many businesses the person responsible for maintaining the numbers is not a professional accountant. The job is likely to fall on the shoulders of the owner, the owner's spouse, or an employee who has other responsibilities besides accounting.

Computerized accounting programs range from inexpensive, less than $50 packages to systems that cost thousands of dollars and require extensive professional help to get them up and going. Defining your specific requirements and then matching these requirements to an accounting software program is critical in order to gain the benefits of computerizing your business.

There are three levels of accounting software available today, entry-level, mid-range, and high-end. Among the different environments accounting programs are available for the DOS, Windows, Macintosh, and Unix platforms. Let us take a look at the profiles of these products.

## The Players

### High-end

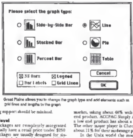
With rare exceptions, the programs are usually modular and will consist of a system manager, general ledger, accounts payable, accounts receivable, order entry, inventory control, and various other modules. You purchase the modules you need and then integrate them together. The software cost for a basic system will be over $2,000 and can easily run to $5,000 if you need 6 or more modules. Most companies will need professional assistance to install the program and fees for installation will run from $2,000 to over $5,000. The total cost of software and professional services for a high-end system will start at around $5,000.

These programs are complex and contain extensive features that provide a powerful accounting solution. They often need extensive support after the installation is completed. Traditional PC dealers lack the necessary expertise to install and configure these systems and the high-end software vendors have developed an extensive network of certified installers to provide this expertise.

### Mid-range

Usually mid-range packages contain the core functions such as the general ledger, accounts payable and accounts receivable in a single module. They will be priced under $1,000 and require some professional assistance to setup. The total installed cost for software and professional services for a mid-range system should not exceed $3,500 for most companies.

The features and technology will be less complex than the high-end programs and ongoing support should be minimal.


Please select the graph type:

○ Side-by-Side Bar ● Line

○ Stacked Bar ○ Pie

○ Percent Bar ○ Table

☒ 3D Bars ☒ Legend

☐ Bar Labels ☐ Grid Lines

Great Plains allows you to change the graph type and add elements such as grid lines and lengths to the graph

### Entry-level

The packages are completely integrated and usually have a retail price under $250. The packages are usually designed for single users with features that are relatively simple, and are easily installed by the user. The programs are usually sold by retailers and dealers, offer little in the way of customization and require little or no support after installation.

### The Canadian Market

The high-end range is dominated by Computer Associates with their ACCPAC Plus accounting system. Evans Research estimated that ACCPAC Plus had 86.4% of the Canadian high-end market in 1991. Two relative newcomers to the Canadian scene are giving Computer Associates a run for their money. Great Plains software has picked up 4.5% and Platinum has 1.7% and these numbers are likely to increase again in 1992.

ACCPAC BPI, BusinessVision II, DacEasy, and NewViews are the key players in the English Canadian mid-range market. BusinessVision II, DacEasy, and NewViews each hold about a 20% market share with ACCPAC BPI in the 5% range. In Quebec, Fortune 1000 holds the dominant position.

### Entry-level

In the entry level segment ACCPAC Bedford, or Simply Accounting as it is now known holds a 71% market share with BusinessVision II next in line with 34.3%. The balance of the market is split among a number of American and Canadian software developers.

### The Other Environments

The Apple Macintosh world has never really focused on the accounting market although this is changing with a new attitude from Apple Canada. Only 3% of the accounting software market runs on the Macintosh platform. Great Plains Accounting holds the lions share of the market, taking about 46% with their high-end product. ACCPAC Simply Accounting, a low end product has about a 26% share. The other major player is Checkmark with about 11% for their mid-range program.

In the Unix world the market is split among RealWorld, SBT, and Great Plains. This is a growing market, but still represents a very small part of PC accounting software being used in Canada today.

### What Features Do You Need

Matching your needs to your accounting software package is the key to making it work. Here are the things you should be looking for when you go shopping for accounting software.

Ease-of-use has to be at the top of your list. If it is not easy to use you will not work with the program. Setting up the program should straight forward. The operating commands should be intuitive and there should a good manual and on-screen help system. Well-designed accounting programs let you perform tasks in a non-structured manner. In other words, they let you work your way within reason. An example would be adding a new customer while creating their first invoice.

### Getting Going

The system should provide a sample charts of account to make getting started easy. It is easier to modify a sample chart of accounts to suit your business than create a new one. Entering your opening balances, customer and vendor lists and inventory items can be time consuming and you need to make sure that the program can handle all of your needs in this area. A good on-line tutorial is another invaluable tool in getting going.

### Doing the Work

The processing side of it should be easy to do and the program should provide critical information such as account, vendor, customer and product numbers at the touch of a key. An accounts payable screen that looks like a cheque is far easier to use than a cluttered screen that forces you to use debits and credits.

Invoicing and cash collections are the key to staying in business. Make sure the invoicing modules covers all your requirements and look at the cash flow management features of the program. Will they provide you with current information on your customers, help you chase past due accounts and tell you what your cash should be in the future?

### Paying the Bills

This part of the system should track your expenses, tell you how much cash you need and write your cheques for you. It should also forecast your cash requirements and predict the cash you need to pay your bills in the next period. This will help you identify when there will be a cash shortage and give you time to deal with it.

### How Am I Doing?

The reporting side of the program should provide timely information about the current and future health of your business. The reporting should be comprehensive and you should be able to modify the reports to suit your particular needs. It is also useful to be able to move financial information from your accounting program to a spreadsheet where you can play "what-if" and develop different forecasts for your company.

### How Do I Get Help?

With all but the simplest accounting program, you will need training and/or professional assistance in setting up your accounting system. Check out the services provided by the software company that produces the program and consultants who install and configure the system. Find out about the software companies certified consultant training program. Check out the available training and in particular look at the cost and quality of the telephone support that is available.

All of these issues are important and should be thoroughly reviewed before you decide which accounting software package is going to become your business advisor.

### A Look At The Programs

Here is a snapshot of the programs generally available in Canada. It by no means covers all the available programs that are currently being sold. Each program listed here has been Canadianized, handles GST and support is readily available in Canada.

### The High-end

ACCPAC Plus is a multi-module DOS based program that contains the usual system manager, general ledger, accounts payable, accounts receivable, order entry, inventory control, purchase order, payroll and sales analysis modules. It is fully integrated and each module can run on its own or with the other modules. The new general ledger module gives the ability to track foreign currencies. With a high market share in Canada, it is a solid performer. The price per module varies from $179 to $1,200.

BusinessVision II Delta is a new high-

*Continued on page 44*

*DTP continued from page 32*

centre button on their three-button mouse, most would not trade it for the Mac's increasingly inadequate one-button model.

**Mac DTP**

Despite its design foibles, the Mac is my top choice for a publishing machine. Here then is a short list of features a DTP Mac should have

1) Color capability Even if you plan on exclusively producing black-and-white printed output, get a Mac with at least the option of adding a true gray-scale or color display Ask to see a scanned gray-scale photo on the screen of a black-and-white model like the Classic and then look at the same image on a gray-scale or color display (like that of the LCII or IIsi) to appreciate why

2) 4MB or more of memory (8MB is practically required for serious work), and twice the hard drive capacity you think you need You'll run out sooner than you think, anyway

3) A printer If you have only occasional printing needs (e.g., for personal use only) you may decide against a laser printer I do not recommend a dot-matrix printer for any purpose other than printing multi-part forms. A dot-matrix is a poor choice for producing publishable text and/or graphics.

**The Inkjet Alternative**

Today's inkjet printers are a good alternative They are comparably priced, quieter, and produce better printed output. I personally favor the Hewlett-Packard DeskWriter (or DeskWriter C if you want color output) over the Apple StyleWriter The DeskWriter is faster, has better paper handling and a more robust mechanism. Further, the DeskWriter's ink is water-resistant, unlike that of the StyleWriter Best of all, the DeskWriter's printhead is completely replaced with every new ink cartridge virtually eliminating the long-term print head problems common to other printers.

I have found that inkjet printers produce their best output on a type of paper called Hammermill Laser Plus. As the name implies, this paper is an exceptional choice for laser printing, too.

With these considerations, the DeskWriter is a good choice for those on tight budgets who require "near-laser quality" output.

If, however, you intend on publishing work for other people professionally or semi-professionally, definitely invest the extra few hundred in a laser printer with a PostScript upgrade option

The latest models of laser printers have two things in common resolution higher than 300x300 dots per inch, and enhanced gray-scale abilities. Certain new models from Apple, Hewlett-Packard LaserMaster, NewGen, QMS, and Xante include both of these features. Other manufacturers are certain to follow suit.

It is worth noting that of all the PostScript clones I have ever tested, only the PhoenixPage (used in Xante printers and controllers) and Adobe interpreters successfully meet my criteria for PostScript compatibility Refer to my article in the April '92 edition of *The Computer Paper* for more details on this complex issue.

**Scanners**

I steadfastly maintain that anyone who considers buying a handheld scanner because they can't afford a flatbed scanner should keep saving until they can. Handheld scanners, besides producing images that invariably look like they were captured with a handheld scanner, make you feel like a klutz half of the time And don't computers already seem to do that more often than we want them to?

Get a flatbed scanner or this advice will haunt you forever.

Look for a unit that can capture 256 "true" shades of gray. The HP ScanJet IIp is a good choice in grayscale scanners as is the Apple One Scanner

Low-end color units of reasonable quality are now available for between $1 000 and $1,500 I've seen good results from the Epson color scanner (La Cie markets this unit via mail-order with its own exceptional software), the HP ScanJet IIc and the Umax UC630 Other units, such as the Abaton Scan/300 Color and the Microtek 300Z have a tendency to produce scans that are too "red " Such lopsided color can, of course, be corrected with a program like Adobe Photoshop (still The Best Program Ever Written, in my opinion), but the others mentioned have better color fidelity

None of these desktop color scanners produce images that would be considered acceptable in a professional publishing environment To achieve a good quality scan, you might utilize a drum scanner at your local service bureau, or — if you have an appropriate CD-ROM drive — have a roll of film processed as a Kodak PhotoCD In fact, at about a dollar per picture, PhotoCD could do serious damage to the desktop color scanner market.

**Fonts**

For DTP, I recommend PostScript fonts rather than TrueType. I fully expect this situation to change in the not-too-distant future and yes, I know that TrueType has better performance than Adobe Type Manager running under Windows 3.1, but *at this time*, virtually all service bureaus use PostScript Type 1 fonts

I recommend Adobe fonts primarily for this reason They are what most service bureaus use There are numerous other reputable font houses, too Agfa and Monotype have very good collections, particularly if you get one of their CD-ROMs where you unlock fonts and pay as you go

You don't need a thousand typefaces to be a competent desktop publisher As a matter of fact, you might find that less is more Many designers stick with a small collection of classic faces; perhaps a couple of sans serif families (Frutiger, Futura, Univers, Helvetica) for headlines and a handful of serif faces (Goudy, Caslon, Garamond, New Baskerville, Century Expanded) for body text, or headlines where you want to impart an air of elegance or fashion

Start by adding the one thing that you don't get with standard laser printer fonts: a sans serif face with really bold bolds.

I advise you to stay away from cheapo fonts The imperfections they invariably contain practically scream AMATEUR!

Some fonts print better at low resolutions than others Faces with subtle curves, such as Zapf Chancery, Optima, Eras and most script faces look particularly hideous in small point sizes at 300 dpi or lower

**Books**

My favorite PageMaker text is *Real World PageMaker* from Bantam Books.

*Quark XPress Handbook* is a good choice for power users of that program.

*Real World FreeHand* is a must-read for FreeHand buffs

I have not yet seen a good book on CorelDRAW 3 0.

The best magazine for aspiring publishers is *Before & After* (call 916-784-3880 to subscribe) Strongly oriented towards PageMaker and FreeHand users, this bimonthly publication is chock-full of fantastic design and layout tips techniques and step-by-step examples It's worth its weight in gold Other good mags include *EC&T* (416-299-6007), *Publish* (415-978-3280) and *The Seybold Report on Desktop Publishing* (310-457-8500) ■

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## Aldus Bundles PageMaker, FreeHand, PhotoStyler

SEATTLE, WASHINGTON (NB) — Aldus Corporation says it will group its Windows applications PageMaker FreeHand, and PhotoStyler programs into a promotional bundle called Aldus Publishing Showcase.

The company says Showcase will be available only in the U.S. and Canada during the fourth quarter of 1992 The combined package will have a suggested retail price of C$995, less than half the price of the three programs purchased separately

PageMaker 4 0 is a page layout program, FreeHand 3 1 is a design and illustration tool, and PhotoStyler 1 1a is an image-processing program that allows Windows users to enhance digitized photographic images

"The Publishing Showcase is a very aggressive attempt on our part to give customers — ranging from business professionals to graphics designers — an easy, cost-effective way to set up a complete publishing environment running under Windows," says Mike Peronto, Aldus USA sales director

The company says that to use Publishing Showcase, you will need Windows 3 0 or later, and a 386- or 486-based PC although the programs will run on a 286-based machine You'll also need 4MB of RAM, an 80MB hard drive, high-resolution graphics adapter card, and a mouse For professional image enhancement, a 24-bit color display system and a Super VGA card or better is recommended

Aldus says the bundle started shipping October 1 The special promotion ends December 31st. Users who purchase the standard retail version of any one of the products bundled in the Showcase on or after September 1st are eligible for a rebate coupon on the purchase of one other Showcase product.

Aldus has had several disappointing quarters recently; it blames the poor results at least partly on less than anticipated sales of its Windows-based products Undoubtedly the company hopes that Showcase will help those sales. It is also in the middle of a lawsuit filed by some of its stockholders, claiming that the company inflated its growth projections and withheld information, which affected the sale of Aldus stock.

The company is expected to announce an upgrade to its flagship product PageMaker in early 1993

Contact: Aldus information: 1-800-333-2538 or 416-340-1288

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## Corel Upgrade To Graphics Users

OTTAWA, ONTARIO (NB) — Eager to lure new customers to its recently upgraded CorelDRAW graphics software, software developer Corel is offering users of rival products a sweetheart deal.

Users of any Windows or DOS-based graphics program can trade in their software for CorelDRAW 3 0 for C$299 That price covers a version with both diskettes and CD-ROM, normally sold for C$695, Corel said. A CD-ROM only version is available as a competitive upgrade for C$260

Products eligible for trade in are Picture Publisher, Aldus Photostyler, Micrografx Designer, Harvard Draw, Aldus Freehand, Adobe Illustrator. Professional Draw Arts & Letters, Charisma Aldus Persuasion, Draw Perfect Harvard Graphics, Lotus Freelance, and Microsoft PowerPoint.

The trade-in deal will be in effect for a limited, but at present unspecified length of time, company spokeswoman Janie Sullivan said.

Launched in May, CorelDRAW 3.0 adds charting, photo editing, and slide-show modules to the drawing module that gave the software its name

CorelDRAW also includes the Mosaic visual file manager, which allows users to preview graphic files in several formats, and CorelTrace, a tool for converting black-and-white bit-mapped images into vector graphics.

The new release supports Object Linking and Embedding (OLE), a Windows feature that makes it easier to exchange files among applications. Besides allowing interaction with other applications, Michael Cowpland, Corel's president and chief executive, said earlier OLE provides the means for the different modules of CorelDRAW to operate on their own but with easy exchange of data among them

Capabilities added to the flagship CorelDRAW module include the ability to edit graphics in preview form as well as in wire-frame mode, unlimited layers improved precision, and on-screen text editing, the company said

Other new features in the draw module include "roll-up windows" meant to give quicker access to frequently used features, as well as a variety of new special effects.

Contact: Corel Corporation, 613-728-8200

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## PhotoFinish 2.0 Automates Scanning Tasks

ATLANTA, GEORGIA (NB) — ZSoft Corporation and WordStar International have announced the release of PhotoFinish 2.0.

The program is an image editor running under Microsoft Windows The companies say it's designed for business users to enhance images in business presentations, brochures, flyers, and newsletters. The $190 program is expected to ship this fall

According to WordStar VP Alex Hoag, photo-realistic images are often the most compelling graphics available, but the expense, time effort, and technical expertise needed to make even the smallest enhancements have been beyond a business user's capabilities Hoag says PhotoFinish 2 0 is easy to use because of its automation and simplicity

Version 2 0 includes automatic scanning and enhancement of images, and can scan, crop, straighten and enhance all in one step. You also get a collection of 24-bit, royalty-free, business-related images The ImageViewer feature allows the user to select and manage images in the library as well as images they have scanned themselves. The program also allows the user to perform basic file-management tasks such as renaming deleting, or moving images

Photofinish supports OLE (object linking and embedding), which allows images to be placed within other documents. and fourteen filters are provided to enhance photos and apply special effects. The program stores images using JPEG compression technology to conserve storage space, and a calibration feature automatically adjusts color in the scanner, monitor, and printer The user can select the level of onscreen help they need

WordStar and ZSoft announced last month that they would merge as soon as shareholder and regulatory agency approval is received WordStar International is best known for its venerable word processing program of the same name The company was founded in 1978 as MicroPro International Corporation and claims an installed base of five million users. ZSoft publishes DOS and Windows graphics, image editing, and paint programs.

Registered owners of PhotoFinish 1 0 and CorelDRAW 3 0 can upgrade to PhotoFinish 2.0 for $60.

Contact: ZSoft, 404-514-6327

PRINTERS

## QMS Rolls Out Color Printers

MOBILE, ALABAMA (NB) — QMS is expanding its line of printers that use its advanced "Crown" technology, specifically in the color printer market. The company has just announced two new color printers that are based on this technology

The ColorScript 210 and the ColorScript 230 are the two newest members of the QMS family Both are built around Mitsubishi color thermal transfer engines. Both also have the Crown processor board in them that gives the printers a very high speed controller (the Intel 80960 running at 25 MHz), as well as the ability to emulate several printing languages (PostScript Level 1 and Level 2 and HPGL), networking ability, and the capability to sense traffic on any of its connectors, accept that traffic, and buffer it up for later processing The Crown board has as one of its options a hard drive to allow for departmental use of the printer

QMS spokespeople told Newsbytes they have discovered that while some color print-outs may take as long as an hour to print, most of that time is spent either at the originating computer, in transmission, or in the printer With Crown technology they are addressing two of these areas — the multitasking ability and network support address the transmission speed problem The computing time within the printer is being reduced by the application of a very high speed and RISC-like processor

The two models are distinguished by two main features. The ColorScript 210 can print on paper that is up to legal size while the ColorScript 230 can handle B-size paper The other main distinguishing feature is the ability of the 210 to print on paper that was formulated for laser printing This is paper that looks like standard copy paper; it is not the special paper that some other color printers require The 230 cannot support this paper QMS spokespeople told Newsbytes that they discovered that the larger format printers are used by the graphics arts professionals while the smaller format is primarily used in a business graphic sense Graphic artists tend to be much more particular about exact color matching and therefore require the special paper and its greater accuracy Those that do not need to be so discerning are quite happy in being able to use more regular paper in their printers.

Both printers will begin shipping later this month. The ColorScript 210 will retail for $4995 while the ColorScript 230 will retail for $7995

Contact: QMS Canada, 1-800-361-3592 604-872-0831

MOVIE NEWS

## Cap'n Crunch Discusses *Sneakers* Movie With Newsbytes

NEW YORK, NEW YORK (NB) — John Draper, author of one of the earliest word processing programs, EasyWriter, and under his nom de plume "Cap'n Crunch," one of the first known hackers, told Newsbytes that while he "really enjoyed *Sneakers*, people should realize that there is an important message contained within "

Draper, who served time in prison for his "phone phreaking," is considered the model on which the role of "Cosmo," played by Ben Kingsley, is based Cosmo, like Draper, served a prison sentence for his activities and, while in prison became a collaborator with a nationwide criminal organization, becoming their technical wizard

Draper accepts the identification with Cosmo and says that the movie brings out the problems of technology transfer in prison He said, "While I was in prison, I learned how to pick a master lock. I didn't ask for the knowledge, it was forced on me Someone would say 'Let me show you this so you would

"They would wheedle things out of me — you don't snitch or not go along in prison I showed them how to build a random code voice scrambler as well as other things about methods of obtaining free phone service It bothers me that these methods are probably used today by Colombia drug dealers.

"We have to be concerned about the fact that prisons are Universities of Crime We don't want criminals to have the benefit of knowledge that our government doesn't have We don't want a Robert Morris or a Phiber Optik sharing a cell with a friend of Noriega's We should learn from history and come up with procedures to insure that this relationship between the computer underground and true criminals is not allowed to flourish "

Draper also told Newsbytes that while he enjoyed the movie immensely, he did not care for violent portions in which guns were used he said, "I hate guns."

Draper became "Cap'n Crunch" when he found that whistles given away in Cap'n Crunch cereal emitted the 2600 tone necessary to "fool" the automatic billing and verification system of the phone companies Since his release from prison Draper has rewritten EasyWriter and a Forth compiler for the Apple II (While writing the software products, Draper was known as "Cap'n Software", he has since returned being Crunch) He has also been employed as a programmer and consultant.

Contact John Draper
crunch@well.sf.ca.us (e-mail)

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## NETWORK NEWS

New For Macintosh:

### Artisoft Ships LANtastic

TUCSON, ARIZONA (NB) — Artisoft has begun shipments of its LANtastic for Macintosh product. This new product allows Macintosh and PC users to access each other's files and to share printers.

LANtastic for Macintosh is a program that runs on its own dedicated PC. This PC needs to be equipped with an Ethernet adapter for access to the LANtastic network that is already in place, as well as an interface card for the AppleTalk network that the Macintoshes are on. Then the LANtastic for Macintosh software is run on this dedicated PC.

Once this whole set-up is up and operational, Macintosh and PC users can interchange files via this gateway computer as well as share printers and other peripherals. For Macintosh users the gateway looks just like an AppleShare server and even has an icon assigned to it that resembles the AppleShare icon. Any PC that is logged into the gateway can then have its files accessed by those Macintoshes that log into the gateway. The Macintosh user would be presented with the look that they are used to — folders and files represented as icons.

Artisoft maintains a database of icons and the programs that they represent so that if a Macintosh program and a PC program have a common file format, they can open each other's files and launch the program when the file icon is double-clicked.

This also works in reverse for PC users who wish to access Macintosh files — with one difference. The files need first to be stored on the gateway machine's hard drive. When printers are being shared, LANtastic for Macintosh allows the PC user to access directly any PostScript printer that exists on the Apple side and the Macintosh user can access any networked printer on the PC side. This is also the way it is for any other networked and shared peripheral.

LANtastic for Macintosh is being sold in two configurations. For $599 the customer gets the software and documentation necessary to convert a PC into the gateway. For $799 Artisoft supplies the software and the manuals as well as the LocalTalk adapter card and a length of cable.

Contact: Artisoft, 602-293-4000, 800-TINY-RAM

## STORAGE NEWS

### New Product: Kodak Writable CD Drive

ROCHESTER, NEW YORK (NB) — Just a few weeks after announcing a major push into the commercial stock photo market for its Photo CD product, Kodak has announced the Writable PCD, a CD-ROM-compatible, write-once system consisting of a recording drive, disc, and related software.

Photo CD is Kodak's name for its brand of CD-ROM XA, an optical storage standard which allows publication of sound, text, and high-resolution images. For about $100 an individual user can have four rolls of 35 mm film developed and stored on a CD-ROM XA disc which can be played back through a Philips CD-I (Imagination Machine) or other compatible player and displayed on a standard television.

What Kodak announced this week was the commercial recorder system and blank recording discs which can be used to create new data discs. The company is also apparently going beyond the photographic applications by expanding its market into the one-off CD ROM recording arena and has cited MCI's use of Kodak Writable technology to publish monthly telephone bills for some large customers.

The PCD Writable 200 is a double-speed CD-ROM XA recorder that produces a full CD-ROM or CD-ROM XA compatible disc in about a half-hour. The less data being recorded, the shorter the recording time for these recordable CD drives so a disc containing only a few images, a limited amount of sound, or only 30-40 megabytes of data would require only a few minutes to record.

Kodak did not disclose exact prices for the Kodak Writable CD discs, but did say that the material-only costs of producing a single disc would be about $2!!

The costs of other CD-WO or CD Write Once recorders capable of recording CD-ROM, CD-I and CD-ROM XA (Photo CD) run about $10,000 for complete packages, including the CD recorder hardware and the necessary premastering and recording software. Other available drives include those marketed by Sony (CDW-900), Philips (CDD521), JVC (XR-W1001), and Yamaha (301 Series recorders).

The company says that Kodak Publishing Software will come in DOS, Windows, Macintosh, and Unix versions.

Newsbytes was unable to obtain any further information about pricing on the Kodak PCD Writer 200 but a customer service representative did say that the product wouldn't actually ship until the second quarter of 1993.

The person at the customer service number given by Kodak for information about Photo CD declined to give out any pricing information and referred this bureau to several press contacts, none of whom were available for comment before deadline.

Contact: Cindy Trane, Kodak, 716-724-1983

### Pinnacle Offers "World's Fastest" Rewritable Optical Drive

IRVINE, CALIFORNIA (NB) — Pinnacle Micro claims it has introduced the world's fastest rewritable optical drive, the PMO-650. The drive has a 19 millisecond (ms) effective access time, according to Pinnacle, which is faster than some hard disk drives.

The company says an 80188 processor running at 20 megahertz (MHz) in the drive itself is responsible for the data-seeking process. The processor does data mapping and data queuing on reads and writes. A lighter optic head for reading and writing, and the built-in processor are credited for the faster speed, according to Pinnacle.

The company says it compared the PMO-650 in benchmark tests for data transfer against the Sony SMO-E501 optical drive and the Seagate ST4350N 300 megabyte (MB) magnetic drive. Pinnacle says its PMO-650 rewritable drive outperformed both the other drives in data transfers ranging in size from 5MB to 100MB.

Pinnacle says the drive can be recognized by Unix operating systems as a standard removable hard drive and the Unix commands such as "mount," "unmount," and "format" all work with the PMO-650. The company makes a version of the drive for the Macintosh, Sun workstation, and Silicon Graphics platforms that retail for $3,995, and a $4,195 unit for the IBM platform.

Contact: Pinnacle Micro, 800-553-7070 or 714-727-3300 ext 220, fax 714-727-1913

## Quantum Low-cost Hardcard EZ Disk Storage Cards

MILPITAS CALIFORNIA (NB) — Another salvo has been fired in the hard drive upgrade and replacement market battle that market research firm International Data says will account for over 20 percent of worldwide drive shipments by 1994 Quantum Corp has introduced the Hardcard EZ drive that slips into an expansion slot on a PC.

The company says that the Hardcard EZ comes in versions ranging from 42 megabytes (MB), through 85MB, 127MB, to 240 MB for PC/AT-class systems.

The company claims that installing a Hardcard EZ upgrade in a PC is simply "a matter of dropping the drive into an available expansion slot and running its automatic installation software."

The Hardcard EZ is being targeted towards small businesses and home computer users who need to expand their hard-drive capacity to meet increased storage requirements.

The Hardcard EZ cards are backed by a two-year renewable warranty Should a Hardcard EZ drive prove defective at any time during this warranty period, Quantum maintains that it will provide a replacement drive that is automatically covered by a new two-year warranty

Hartsog told Newsbytes that the suggested retail pricing of the products is $269 for the 42MB card $369 for the 85MB, $449 for the 127MB, and $749 for the 240MB card "Now price (difference between Hardcards and standard disk drives) is not nearly as significant as it has been in the past," she said.

Contact: Quantum Corp., 408-894-4000

TELECOM NEWS

## Canada's Unitel Announces Long-distance Plans

TORONTO, ONTARIO (NB) — Unitel Communications, the national carrier that earlier this year got regulatory approval to offer competitive long-distance phone service in Canada, has announced details of its plans.

Unitel said its national network will go live October 19 The company said it will provide basic service at rates 15 percent below those of the established phone companies with no service charge or initial hook-up fee

Unitel also announced several discount plans for home and business users, which it said will provide savings of as much as 35 percent over phone company rates

Toronto telecommunications consultant Eamon Hoey described Unitel's plans as a "pretty aggressive package." He said he was surprised that the company is undertaking to provide residential services right away, and the magnitude of the discounts is impressive

There is a catch, though. For the time being most Unitel users will have to dial 17 extra digits to use the competitive service This consists of a seven-digit code to reach Unitel's network, followed by a 10-digit authorization code

In its most recent statement, Unitel blamed this inconvenience on the telephone companies appeal of some provisions of the regulatory decision that gave Unitel the right to compete in long-distance service On the day the competition decision was announced last June however company spokesman Peter Jonecek said the extra digits would be needed initially anyway

While Unitel won't be "somewhat disadvantaged" by this, "I think that there's enough need out there" that the extra digits won't have a major effect on Unitel's business, Hoey said. From 10 to 25 percent of phone company customers are dissatisfied enough to move to an alternative service despite the extra digits Hoey said, and in addition, autodialers will insulate many people from the extra codes.

Unitel announced three discount plans for home users. In one plan, users will pay C$4.50 per month for a 30-minute block of free calls that must be made in the evening, on weekends, or on holidays within the territory of their regional phone company Eligible calls beyond the 30-minute limit will be charged at a discounted rate, and other calls will be charged as normal Unitel rates.

In the second home plan, users will pay C$7 50 per month for a 30-minute block of free calls that must be made in evenings, on weekends, or on holidays, to points in Canada or the United States. Discounted calls exceeding the 30-minute limit will be charged at a discounted rate

The third home plan, called the World Plan provides discounts on overseas calls for a C$2-per-month subscription fee.

Business plans include VRoute and VRoute Express. Both of these are expansions of existing private-network services. Starting in October, businesses will be able to use Unitel's VRoute services for all their long-distance calling and will get volume-sensitive discounts For these services, the extra access codes will not be required Unitel said

Unitel also announced a small-business calling plan aimed at customers that spend between C$50 and C$1,000 on long-distance calling With a C$50 minimum monthly phone bill, callers will get 10 percent off calls to Canada and the United States during specified hours, and another 10 percent off calls to the area code the customer calls most often The plan also promises a 10 percent discount over phone-company rates on overseas calling

Contact: Unitel Public Affairs, 416-345-2365.

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**Accounting** *Continued from page 39*
end program that operates entirely in real time. Every entry is processed immediately and your books are always up-to-date. It includes 17 modules, including payroll and point-of-sale, and an outstanding budgeting and forecasting program. It sells for $1,995.

Great Plains Accounting is a full-featured multi-module accounting program. It contains the usual set of modules and runs in the DOS, Windows, Macintosh and Unix environments. Its key features are flexibility in reporting, ease of use and outstanding support. The price per module is $795.

Platinum is a feature-rich accounting and management information system. It includes foreign currency reporting, multiple languages and unlimited history. It is designed to run on networks and takes full advantage of relational database technology. There are 20 modules available and the price per module is $1,200.

### The Mid-Range

ACCPAC BPI is a 6 module, integrated accounting series that can be used alone, integrated or run on a local area network. There is a built-in upgrade path to the high-end ACCPAC Plus system. The price per module is $495.

BusinessVision II Turbo is the mid-range version of the BusinessVision II family. It operates entirely in real time, so every entry is processed immediately and your books are always up-to-date. It includes 14 modules, including payroll, inventory, job cost and purchasing. Its major strengths are its order processing and sales tracking features. It sells for $1,295.

DacEasy Accounting has sold more copies than any other accounting software program. It started life as a low-end product but now with its 7 integrated modules and powerful features it now belongs in the mid-range market. It can handle multiple companies, unlimited file sizes and includes point of sale invoicing. It retails for $299.95.

MultiLedger is a mid-range Macintosh accounting program designed for small to medium sized businesses. It includes the GL, AR, AP, inventory tracking and job cost modules. It exploits all of the features of the Macintosh System 7.0 environment and is a very easy package to use. It sells for $475.

NewViews is a flexible real time accounting program that manages GL, AR, AP, payroll, invoicing, and sales analysis. It uses a highly innovative spreadsheet approach that allows you to follow each transaction from its entry to point in the report.

### The Entry-level

ACCPAC Simply Accounting is an easy-to-use program that runs in the DOS, Windows and Macintosh environments. It is a total integrated package that contains a broad array of functions and includes inventory, job costing and payroll capabilities. It sells for $225.

Access to Platinum from Advanced Business Systems is a small business accounting system that runs under DOS and Windows. It processes information on-line with automatic system wide integration to the general ledger. The program contains General Ledger, AR, AP, order entry, inventory, job costing, time billing and cheque book modules. The program sells for $250.

BusinessVision II is the entry-level version of the BusinessVision II family. It also operates entirely in real time while every entry is processed immediately. It handles GL, AR, AP, payroll, inventory, order entry, invoicing, point of sale and sales analysis. It sells for $275.

DacEasy Instant Accounting is a brand new program from DacEasy Canada that includes both a DOS and Windows version in one box. The package handles all of the basics including invoicing, paying your bills, recording your bank account and preparing financial statements. It is a very graphical program that makes it easy to use. At $69.95 it is a real bargain for the small business owner.

One Write Plus Accounting is the computer version of the well known manual one write system. It includes the General Ledger, AR, AP and a database called Supertrack for tracking jobs, inventory, vehicles, property, etc. The program is remarkably easy to use and sells for $195.

Pacioli 2000 is one of the cheapest of the low end accounting programs and at $99 is a great value. It includes eight modules for the general ledger, debtors, creditors, stock control, invoicing, purchasing, budgeting and forecasting.

PeachTree Basic is an integrated program that contains all of the normal accounting program modules. The modules can be running separately or together. This is one of the simplest programs on the market and it is powerful and easy to use. It sells for $99.

Computerized accounting programs should provide you with the management tools you need to run your business. They should be easy to work with and save you time. The success of any accounting system is directly related to the time you spend selecting the right package for your business. With the right package, proper training and in some cases professional assistance you will discover how you survived before you computerized the numbers. ■

*Alen Salmon is managing director of Salmon & Associates, a Toronto-based company specializing in the management of computer system projects. Tel (416) 276-4856*

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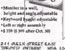

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# EVENTS

**CANADIAN COMPUTER SHOW & CONFERENCE** November 23-26 Toronto International Centre Mississauga. Highlights include a range of world-renowned experts on computer technology and solutions. Contact: (416) 252-4887 Fax (416) 252-5849

**CANADIAN CONFERENCE** on a very large scale Integration (CCVLSI '92): October 18-20 Chateau Halifax, Nova Scotia. Contact Dr D. Peacock at (902) 421 1266, Fax (902) 429-9688.

**COMDEX/FALL & WINDOWS WORLD 92:** November 16-20 /92. Conference and show of world wide manufacturers of small computer systems, accessories, software, and supplies. For information call The Interface Group (617) 449-6600

**COMPUTER FEST** - East November 13-15 /92 Metro East Trade Centre Pickering. A three day show and sale. Seminars, demonstrations, and free advice. Sponsored by Toronto Computer ShowFest Productions Inc. 985-4530.

**DISASTER RECOVERY INFORMATION EXCHANGE**, quarterly meeting. December 8 '92. Location: Royal Bank of Canada 315 Front St. W. Main Fl Auditorium. Contact: Graeme Jannaway D R I E (416) 360-1761 ext. 7782.

**DOWNSIZING EXPO CANADA.** Sheraton Centre Toronto. Contact Digital Consulting, Inc. (508) 470-3880, Fax (508) 470-0526.

**HARVARD GRAPHICS**, Software Publishing Corporation: Showcase of Family Products Seminar: Presentation of Harvard Graphics on the DOS and Windows platforms, and Superbase 4 a Windows RDBMS applications development tool. RSVP 1-800-237-1081

**INTEROP:** San Francisco, CA, October 26-30. Contact Interop Inc. 800-Interop x600 or (415) 941-3399 x600 fax (415) 941 1779.

**MICRO EXPO** October 17-18 Place Bonaventure, Montreal. A three day show and sale. Seminars, demonstrations and free advice. Contact ShowFest Productions (514) 844-0502

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**PC EXPO:** Chicago IL, October 27-29. Contact Bruno Blenheim, Inc., (201) 346-1400 or 800-829-3976 x6 (201) 346 1602

**PORTABLE COMPUTING FORUM:** Nov 30-Dec 1 Metro Toronto Convention Centre. An event providing business executives, MIS professionals and corporate decision makers a chance to experience and learn more about the technology through valuable information sessions and product displays. Contact (416) 581-8000.

**SEMINARS FROM CANADA REMOTE SYSTEMS:** Thursday evenings 7 p.m.-9 p.m. Free to members and non-members alike Nov. 12 & Dec 10: An Introduction to BBSing. Oct. 29: Advanced Users' Seminar. Dec 3: Special Services Seminar. CRS has short informal new-user seminars every Saturday 11 a.m.-12 p.m. Pre-registration required for Thursday nights. For more information call 620-1439

**SEMINARS ON PEN-BASED COMPUTER SYSTEMS.** The series will run monthly. Location: the Honeywell building, 155 Gordon Baker Road. The first four seminars feature horizontal software for pen-based systems. Buyers can talk to vendors and experts and try out the hardware and software. Contact "Second Office Inc" at 300 Eglinton Ave. Suite 706, Toronto, Ont. M4P 1L5 (416) 932 2070

**THE CANADIAN HIGH TECHNOLOGY SHOW** April 27 & 28 1993 at Place Bonaventure, Montreal. An electronics November of exhibitors. Four Main sections: Components & Microelectronics Design Automation Electronic Production & Packaging and Test Measurement & Instrumentation. For professionals from the high technology industry & users of electronics. Trade only. The Show and the Conference Program will be running concurrently. For more information call Reed Exhibition Companies (416) 479-3030

**THE CANADIAN NCR CUSTOMERS ASSOCIATION (CNCA)**: Semi-annual national, fall meeting, October 21 9 a.m.-4 p.m. NCR's Customer Support Centre, 6865 Century Ave., Mississauga, Ontario. Contact CNCA chairman Morris Di Stefano, Schenker of Canada Ltd., (416) 234-9300, fax (416) 234-9088.

**THE VIRTUAL VILLAGE BBS SEMINARS:** Free of charge but must be booked in advance as space is limited. Two seminars per day: Tuesday Oct. 27 9:30 a.m. and 1:00 p.m. "Buying a Faxmodem" Tuesday Nov. 10 same times: "Using Winfax Pro" Location: 99 Atlantic Ave., #416. Call 538-0101 to register.

**WORLD OF COMMODORE AMIGA.** Show on December 4-6, 1992 at the Toronto International Centre 6900 Airport Rd. Hall One Miss., ON. Hours, 10 a.m. - 6 p.m. Admission $8.00 adults $6.00 students and seniors and group discounts available. Free seminars. For more information contact Karen Jewell at (416) 285 5050 or fax 285-0630

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**CASE** Special Interest Group. A special interest group or SIG is currently being formed to help meet the needs of people interested in learning more about CASE. The purpose is to provide a forum where members may share their experiences. Experienced users or those contemplating introducing CASE to their organization are invited to call either Joe Da Silva at 252-1498 or Rob Beekman 886-2884.

**CLUB CUBASE** Toronto area users of Steinberg Software products, especially their powerhouse sequencer Cubase, now have a forum to share information and develop new skills. Club Cubase meets at 7:30 PM on the last Monday of every month in Room C420 at the Casa Loma of George Brown College, 160 Kendal Ave. Next meetings Oct. 26 and Nov. 30. For more information contact Club Cubase at 62 Harnworth Drive, Willowdale, ON M2H 2C2 or call 416-496-9806.

**CLUB MAC COMPUTER GROUP OF ONTARIO**—All Mac users, Macintosh OS & related issues, meets 2nd Tuesday Mechanics Institute 222 St. Patrick St. Toronto. 7 pm to 10 pm. Infoline 416-462-1708.

**THE CANADIAN AUTODESK MULTIMEDIA USER GROUP**— Interested Users of Autodesk Multimedia products are invited to call Pia Zimpert at (416) 881-1786.

**CANADIAN COMPUTER GRAPHICS ASSOCIATION** CCGA's mission is "to provide education and information in computer graphics technology and its applications". At special events (next event Dec. 8, '92) members are informed of developments in the industry and provided a networking forum to develop career and business opportunities. Additional benefits include: insurance, newsletters, subscriptions, employment liaison office, and annual art & design competition. CCGA 2175 Sheppard Ave. E. Suite 110, Willowdale, Ontario M2J 1W8. Fax (416) 491-1670 Tel (416) 491-2886

**COMPUTER TRAINERS NETWORK** A group of teachers, tutors and consultants who meet [illegible] month, to discuss [illegible] or computer-related issues. Meeting format consists of refreshments, business portion, guest speaker and open discussion. There are three different memberships available. Location: The McGill Club, 21 McGill St. Toronto, Ontario 977-4122. For more information please call Veronica of Vision Computer at (416) 323-0406.

**IRMAC**—Information Resource Management Association of Canada dedicated to data management, IBM data dictionaries, C.A.S.E., and strategic planning in the corporate environment. Monthly meetings in Toronto, Ottawa, and Victoria. (416) 986-6566.

**KW-MUG** 376 Peel Street, New Hamburg ON N0B 2G0 (519) 662-2627. Frees Public domain distribution, reviews of current software, meetings available, no fees.

**STC** Society for technical communication. Dedicated to the advancement of the theory and practice of technical communication in all media. The Toronto chapter has over 300 members. Meetings from Sept.-June at Sun Life Assurance Company of Canada, 150 King St. W., on the 2nd Tuesday of each month. For more information contact Christine Mills at 595-7690 or George Kline at 448-3823.

**"TANG NORTH"** Monthly meeting 2nd Thursday of each month. McLennan Physics Lab (U of T) Room 119, 7:00 PM (Corner of Huron & Russell). Everyone Welcome. For info call Daniel (416) 395-1898.

**THE TORONTO COLOUR COMPUTER GROUP** meets on the 2nd and 4th Mondays of each month. For more information call Larry Osborne at 472-1809.

**TORONTO USERS GROUP** User members support of AS/400/38 imaging. Meetings held at the Airport Marriott Hotel every two months. Next meetings on Nov. 18, 1992, Jan. 20, 1993, Feb. 16, 1993, Mar. 24, 1993, and May 19, 1993. Please contact Wanda Beddy at Suite 2550, P.O. Box 77, Toronto Dominion Centre, Tor., ON M5K 1E7 for more information or call (416) 867-2546.

**THE ELITE GROUP OF 3-D PROGRAMMERS** (E.G.3D P.) in association with L.T.P.D. Dedicated to Atari users. For more information write to L.T.P.D. c/o (E.G. 3D P.) 37 Montye Ave. Box 80 Toronto, Ontario M6S 2G8.

**K.R.G. 1985** (The Kidstuff Reunion Drive Group For 1985) At 144 Gilbard Ave. Riverdale. To. 461 1343. Call for meeting dates. 11AM Saturdays. Group's focus is to collect 1975-6 Canadian pennies in order to reassert interest by signing a petition to reinstate the 1975-6 CTV Show "Kidstuff" Kompuzer Kidstuff 1985?? 8005?? Ask for Jeffrey Lerner.

**LOGIC.** An Independent Apple User Group. Provides a support and information network to users at all levels. LOGIC accomplishes this by holding monthly meetings, hosting Special Interest Group meetings, providing and electronic bulletin board, publishing the Maple Orchard magazine (free to members), and maintaining an extensive library of shareware and public domain software. Meetings 1st & 3rd Tuesday of the month, North York Centre, 5110 Yonge St. in the Memorial Hall at 7:00 PM. Messages (416) 323-0638 BBS (416) 497-5771

**NEXT USERS GROUP** NeXT computer support. 2nd Thursday. McLennan Physics Lab (University of Toronto) 60 St. George St., Room 118, 7 pm, 416-368-1808.

**NETWORK/BUSINESS COUNCIL** Etobicoke lead exchange meets second Thursday every month for light informal breakfast and networking. 255-8217 x488.

**PCCT (PERSONAL COMPUTER CLUB OF TORONTO)** PC users. 3rd Tuesday. St. Gabriel's Community Centre, 672 Sheppard Ave. E. (2 blocks east of Bayview, north side). North York. 7 p.m. membership includes shareware BBS, special interest groups (SIGs) & workshops. Information 244-6786

**TAF (TORONTO ATARI FEDERATION)** Atari users. 3rd Thursday. North York City Centre Library, 5120 Yonge St. (at Park Home). public domain library, regular demonstrations & guest speakers. Infoline 416-425-5367. BBS 236-0318. Non-member admission $2, membership $35 (inc. newsletters)

**TPUG (TORONTO PET USERS GROUP INC.)** Commodore users (PET, 64, 128, Amiga, CDTV, MS-DOS, etc.) meets Tuesdays (1st, 128; 2nd, Amiga; 3rd, GEOS; 4th, 64). York Public Library, main branch, 1745 Eglinton Ave. W. (near Dufferin) 7:30 p.m. 3rd Thursday, Alderwood United Church, 44 Delma Drive, Etobicoke 7:30 p.m. software library, newsletter & BBS. Information 416-253-9637

**TORONTO PARADOX GROUP** meets 2nd Thursday of every month at 5:00 PM. Free BBS (416) 271-5795. Call for next meeting Loc. & list of presentations. Learn about PAL (Paradox Application Language), add-in products, Paradox tips and traps. For membership info., contact Doug Campbell (416) 496-0061

**TORONTO TIMEX SINCLAIR USERS CLUB** All Timex and Sinclair computers. 1st Wednesday. Forest Hill Collegiate Inst. 732 Eglinton Ave. W. 7 p.m. demonstrations. bi-monthly newsletter. Voice information (416) 751-7559

**TRACE** Toronto Regional AutoCAD Exchange. Presentations on the last Tuesday of every second month. Upcoming dates: November 24th 1992 and January 26th 1993. Held at the Malton Community Centre, 3540 Morningstar Drive. For details call Tim Lucas at 756-8765.

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